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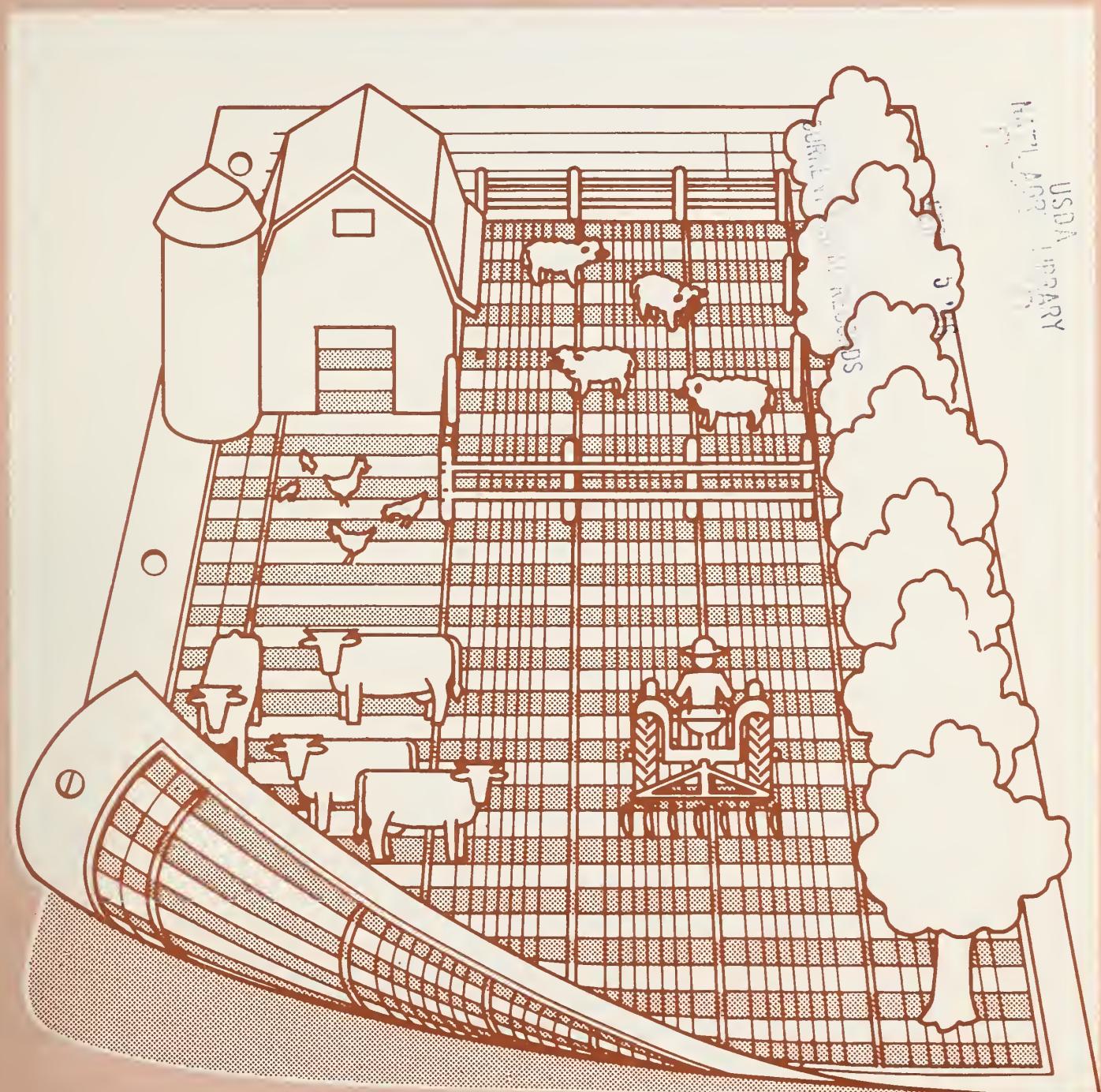
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Economic Indicators of the Farm Sector

Farm Sector Review, 1984



Abstract

Farm production in 1984 rose 17 percent as crop output climbed 25 percent and output for all livestock and products increased except for pork and milk. Farm prices started at high levels but fell during the second half of the year in the face of large harvests. A slight increase in production expenses and a decline in farm interest expenses helped keep unit production costs for most major crops near or below those for 1983. Declining farmland values reduced the value of farm assets by 13 percent, cutting farm operators' equity in those assets by 11 percent. This report assesses the performance of the major components of the farm economy during 1984: income, financing, consumption of farm products, and exports.

Keywords: Farm income, balance sheet, costs of production, capital flows, output, productivity.

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Highlights

Despite a rise in U.S. farm income, a sharp drop in the value of farmers' assets contributed to continued financial difficulties in 1984. The farm financial picture was especially uneven, with some types of farms doing better, and others worse, than in 1983. Net cash income increased 19 percent for livestock producers but fell 26 percent for crop producers. Net farm income, a production-based measure of farm returns, increased to a record level.

One key to the 1984 farm situation was the recovery in farm production. Crop output increased more than 25 percent because of more acres planted and generally favorable weather, in contrast to 1983's lower production caused by drought and acreage-reduction programs. Output of all livestock and products except pork and milk increased. The larger 1984 farm production resulted in a 17-percent increase in farm productivity from the depressed 1983 level.

With large supplies, domestic consumption of farm products increased, and U.S. farm exports rose by 5 percent for the year ending September 30, 1984. Farm prices started 1984 at high levels but fell during the second half in the face of large harvests. Farmers' cash receipts for the year rose slightly. And Government payments, an additional income source, remained high and totaled 21 percent of net cash income.

Although farmers bought more inputs for larger plantings, small increases in input prices held the rise in total farm production expenses to less than 3 percent. Farm interest expenses dropped for the second year in a row. Unit production costs for most major crops were near or below those in 1983.

Net cash income increased 2 percent to \$39.2 billion. However, adjusted for inflation, it declined. Deflated net cash income has dropped about 16 percent since 1980. Furthermore, net cash incomes were lower in 1984 for producers of cash grains, cotton, tobacco, vegetables and melons, horticultural specialities, and dairy products. Survey data indicated that an estimated 277,000 farms with sales over \$40,000 (about a third of the farms) had negative or zero cash flow.

A sharp drop in farmland values reduced the value of farm assets by 10 percent; farm operators' equity in those assets declined by 12 percent. This aggravated the financial problems of heavily indebted farmers. The debt-to-asset ratio of all farmers increased to 22.2 percent, compared with 16.5 percent in 1980. An early 1985 survey estimated that 370,000 farms (of 1.7 million farms covered in the survey) carried a debt-to-asset ratio of 40 percent or more.

Preface

In 1983 the Economic Research Service (ERS) revised the format and some estimation procedures to calculate the costs of producing major U.S. agricultural commodities. These procedures and associated format more accurately reflect the financial well-being of today's farm sector.

The major addition to the budget is a cash receipts section. In addition, a cash expenses section appears separately from a total economic costs section. This gives a better understanding of the selected enterprise's financial situation from both shortrun (cash flows) and longrun (economic costs) perspectives compared with other enterprises and across regions.

This is one of five reports in the Economic Indicators of the Farm Sector series. Other reports are Costs of Production, National Financial Summary, State Financial Summary, and Production and Efficiency Statistics.

This publication was prepared by the staff of the Farm Costs and Returns Section, Economic Indicators Branch, National Economics Division, ERS.

Principal contributors to this report are:

Economic Indicators of the Farm Sector

Farm Sector Review, 1984

Overview of Farm Sector Performance

This report assesses the performance of the major components of the farm economy during 1984: income, financing, consumption of farm products, and exports.

Farm income continued to erode from the continued effects of inflation, even while achieving near-record or record nominal levels. Deflated cash income from farming, perhaps the most reliable long-term measure of farm income, fell below \$18 billion for the first time since 1970. Government commodity programs contributed \$8.4 billion to income in 1984, 22 percent of cash income, and a level nearly as great as the 1983 record amount. Poor economic conditions in much of the farm sector held down spending on production expenses which otherwise would have been higher.

Income and Cash Flow

Nominal farm income (current dollars) reached a record \$34.5 billion (table 1). That total is not adjusted for the erosive effects of inflation on sector purchasing power. Deflated net farm income, at \$15.5 billion, was slightly less than 45 percent of nominal income (\$34.5 billion), helping explain the large impact of inflation since 1972 on the farm sector. Nominal net farm income, at or near record highs, tended to fluctuate more than cash or off-farm income because of frequent wide swings in annual inventory levels. The nearly 30-percent decline in deflated off-farm income from the \$23-\$24-billion level of the early 1970's helps explain why the farm sector continues to face income difficulties relative to the overall economy. Figure 1 shows the declining trend for deflated farm cash income and the increasing trend for Government payments since 1973-74. Both trends are symptomatic of income stress in the sector.

Cash receipts increased by more than \$5 billion from the 1983 levels which had been held down by the Payment-In-Kind (PIK) program and drought (table 1). Production expenses rose by \$3.9 billion to a record of nearly \$140 billion.

Debt, Assets, and Equity

Asset value and equity fell (table 2). Real estate values peaked at about \$847 billion in 1980-81, experienced 2 years of moderate declines, then fell sharply in 1984. Primarily because of the \$104-billion fall in 1984 real estate values, total assets declined by \$106 billion. Financial assets gained \$2.9 billion, the only asset category to increase. Figure 2 shows the effects of the 1981-84 recession on farm asset inventories and valuations.

Farm liabilities continued the trend begun in 1982 of showing marginal declines of 1 to 2 percent. Total liabilities of \$212 billion in 1984 were \$3.7 billion less than 1983 and \$4.7 billion less than the record 1982 level. The

Table 1--Farm sector income, 1970-84

Year:	Cash receipts:	Government payments:	Production expenses:	Net cash income	Current dollars	Net farm income	Current dollars 1/	Off-farm income	Current dollars 1/
<hr/>									
<hr/>									
<hr/>									
<u>Billion dollars</u>									
1970 :	50.5	3.7	44.5	18.1	19.7	14.4	15.7	17.6	19.3
1971 :	52.7	3.1	47.1	17.7	18.5	15.0	15.6	19.1	19.9
1972 :	61.1	4.0	51.7	22.7	22.7	19.5	19.5	21.3	21.3
1973 :	86.9	2.6	64.6	35.2	33.3	34.4	32.6	24.7	23.4
1974 :	92.4	.5	71.0	34.2	29.7	27.3	23.7	28.1	24.4
:									
1975 :	88.9	.8	75.0	29.0	23.0	25.5	20.3	23.9	19.0
1976 :	95.4	.7	82.7	29.4	22.2	20.2	15.2	26.7	20.2
1977 :	96.2	1.8	88.9	27.3	19.5	19.9	14.2	26.1	18.6
1978 :	112.2	3.0	101.0	34.6	23.0	27.4	18.4	29.7	19.8
1979 :	131.5	1.4	119.0	37.0	22.6	31.7	19.4	33.8	20.7
:									
1980 :	139.8	1.3	129.4	37.2	20.9	20.2	11.3	35.1	19.7
1981 :	142.1	1.9	136.1	35.8	18.3	29.8	15.3	36.9	18.8
1982 :	142.9	3.5	136.9	38.3	18.5	24.6	11.9	37.9	18.3
1983 :	136.3	9.3	135.6	38.3	17.8	15.0	7.0	38.8	18.0
1984 :	141.8	8.4	139.5	39.2	17.6	34.5	15.5	40.0	17.9

1/ Constant dollars are 1972-based.

**Figure 1--Deflated net cash income
and government payments
1970-84**

Billions of 1972 dollars

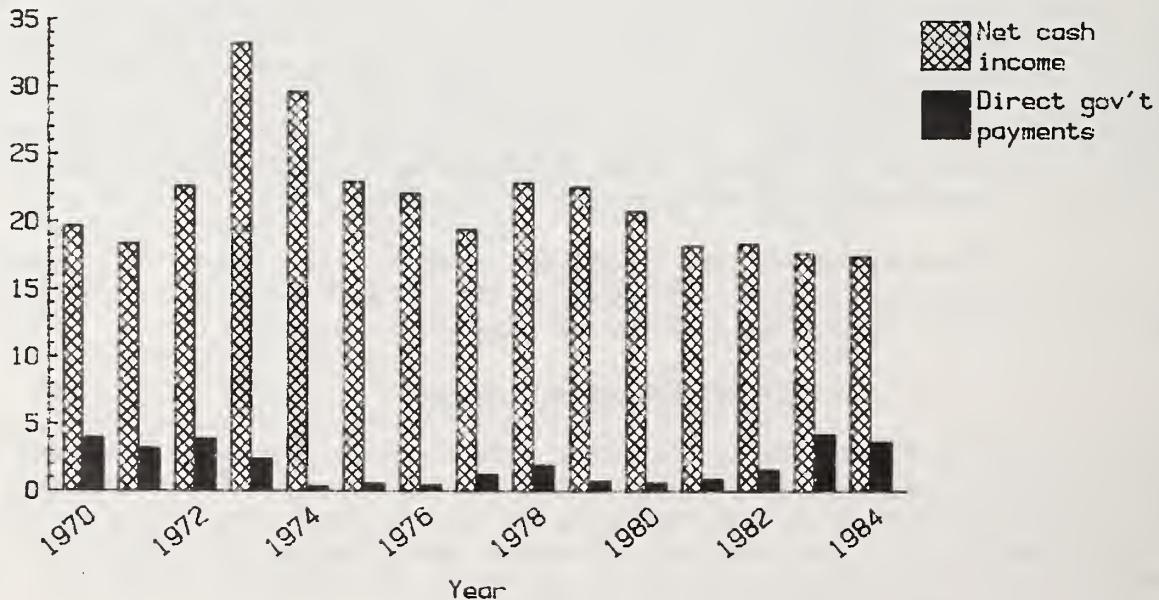


Table 2--Farm sector balance sheet overview 1/

Year	Assets			Liabilities			Equity			Sector debt-to- asset ratio	
	Real estate	Other physical assets	Financial assets	Total assets	Real estate	Nonreal estate	Total liabilities	Current dollars	Constant dollars		
----- <u>Billion dollars</u> -----											
Percent											
1970	223.2	78.8	24.0	326.0	30.3	24.2	54.5	271.5	296.7	16.7	
1971	239.6	86.5	25.7	351.8	32.2	27.4	59.6	292.2	304.4	16.9	
1972	267.4	99.8	27.8	394.8	35.1	29.8	64.9	330.0	330.0	16.4	
1973	327.8	120.9	29.9	478.6	39.5	33.8	73.3	405.2	383.0	15.3	
1974	359.8	113.7	29.3	502.7	44.7	37.1	81.8	420.9	365.7	16.3	
:											
1975	418.2	126.4	31.8	576.4	49.7	42.0	91.7	484.7	385.3	15.9	
1976	496.4	134.2	33.6	664.3	55.3	48.8	104.1	560.2	423.4	15.7	
1977	554.8	147.3	34.4	736.6	63.5	59.5	123.0	613.6	438.0	16.7	
1978	654.7	180.4	38.0	873.2	71.6	69.5	141.1	732.1	486.8	16.2	
:											
1979	765.7	208.8	40.7	1,015.3	85.6	80.5	166.1	849.3	519.8	16.4	
1980	846.6	219.0	42.7	1,108.3	95.8	86.6	182.3	926.0	519.1	16.5	
1981	846.7	219.3	45.1	1,111.1	105.8	96.3	202.1	909.0	464.7	18.2	
1982	808.7	225.4	48.0	1,082.0	110.0	107.2	217.2	864.8	417.0	20.1	
1983	798.0	213.1	50.3	1,061.4	112.6	103.6	216.2	845.1	392.5	20.4	
1984	693.7	208.9	53.2	955.8	111.6	100.9	212.5	743.3	332.7	22.2	

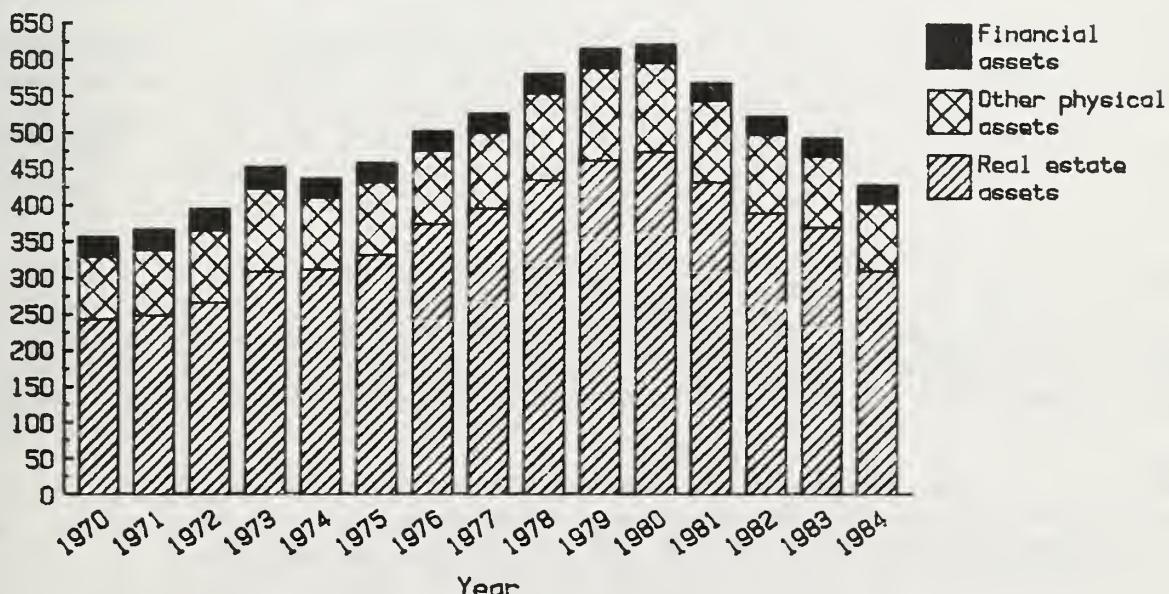
1/ Including households, Dec. 31, 1970-84.

2/ Constant dollars are 1972 based.

Totals may not sum due to rounding.

Figure 2--Deflated farm sector assets
including households, Dec 31
1970-84

Billions of 1972 dollars



decline in farm debt in 1984 was small compared with the more than \$100-billion fall in farm assets.

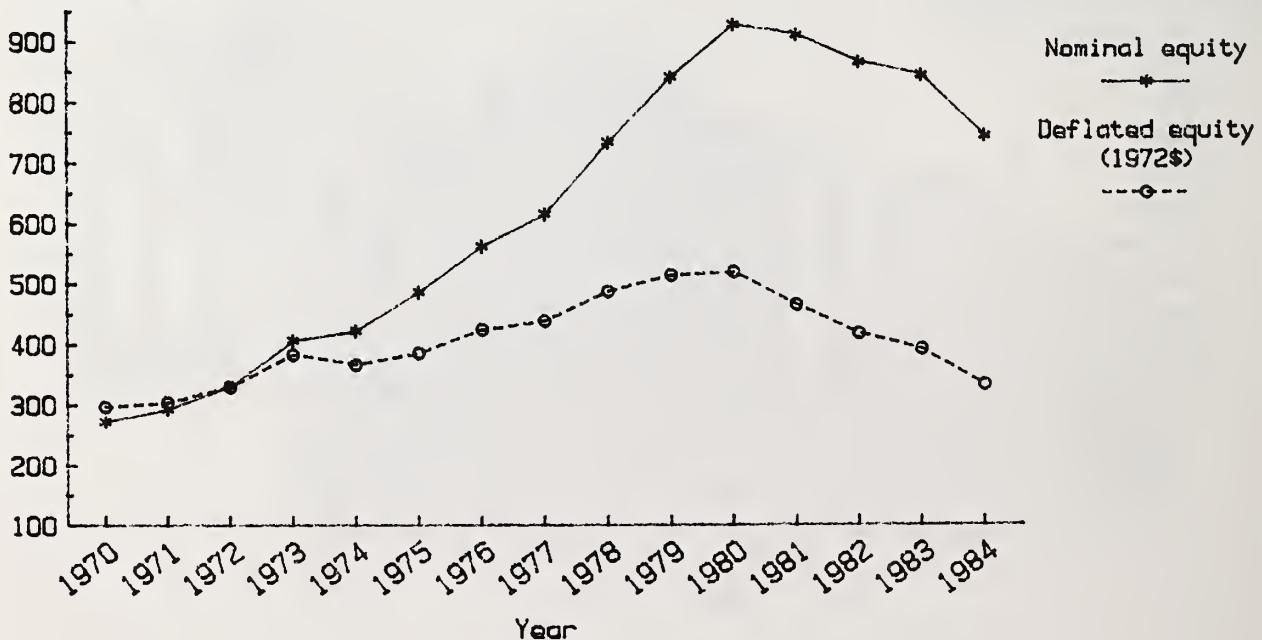
Farm sector equity declined by \$101.8 billion. Figure 3 shows the importance of this large change in equity to farm sector economic well-being by depicting the trends in both current and constant dollar sector equity levels. The 1984 ending equity of \$743 billion was more than \$180 billion less than the record high in 1980 (fig. 3). The deflated equity of \$332 billion in 1984 was \$187 billion less than the record amount of 1978. Deflated equity in 1984 was considerably less than the 1973 level, and the sector debt-to-asset ratio of 22.2 percent was 45 percent higher than the 15.3-percent level of 1973, a watershed year, when net income reached its record high.

Profits and losses in farming are capitalized into land values. The major financial reversal in 1984 primarily reflected the effects on land values of continuing declines in income levels, particularly when viewed in deflated (constant) dollars.

In an economic sense, the earnings of a sector are the sum of current income generated during the year and the change in value of the sector assets between the first and last days of the year. Such a change remains a "paper" change until a capital gain or loss is realized through the sale of sector assets. However, "paper" declines in equity, because of falling land prices, can immediately affect farm borrowers and lenders by reducing the ability to borrow against farmland. The decline in land values also reduces the potential money that could be raised by sales of farmland. Thus, farmers with a high ratio of

Figure 3--Nominal and deflated farm sector equity including dwellings, Dec 31 1970-84

Billion dollars



debt to assets may have found that their net worth actually became negative because of land value declines since 1981. And, technical insolvency among farm borrowers can result in the bankruptcy of their lenders as well, especially in regions experiencing the largest declines in farm income and equity, where farm lenders have a heavy concentration of farm loans.

Demand for Farm Products

Several uses of farm products exist (fig. 4). The major 1984 final demands are exports (\$37.9 billion), clothes and shoes (\$140.2 billion), food (\$332.2 billion), tobacco (\$30.8 billion), and farmers' purchases of seed, feed, and livestock for breeding, feeding, and dairy purposes (\$33.4 billion). Their total value was \$541.1 billion in 1984. The demands are not stated in farmgate value because transportation, storage, processing, and marketing charges are included. The exception is consumption of domestically produced food for which an estimate of the farm value is available.

Farm origin inputs (seed, feed, and livestock purchased by farmers from other farmers) of \$33.4 billion constituted 32 percent of the \$102.8 billion in inputs used in the farm sector, and 19 percent of the \$173.7-billion value of gross farm output. However, the comparisons are not entirely valid because purchased seed, feed, and livestock include transportation, storage, processing, and marketing charges. However, the comparisons illustrate an important economic fact. Farm sector demand for its own farm products is large and, oftentimes, overlooked.

Tobacco cash receipts of farmers totaled \$2.8 billion. Consumer tobacco expenditures amounted to \$30.8 billion. The difference of \$28 billion represented the value of transportation, storage, processing, and marketing charges plus imported tobacco.

The farm value of domestically produced food totaled \$89.5 billion, or 52 percent of the value of gross farm output. Although total food consumption is affected by changes in population growth, changing consumer preferences, and the changing socio-economic characteristics of the population such as average age greatly affect individual commodity consumption. Changes in domestic food commodity consumption will affect farm income by type of farm differently.

Food consumption increased less than 4 pounds per person (representing a minor change) to an estimated 1,426 pounds. It has increased approximately 3 percent in the past 15 years, and 1984's consumption was the highest level since the 1950's. But animal and crop products have not fared alike. Consumption of animal products declined 5 percent between 1970-72 and 1984 compared with a 10-percent increase in crop products (table 3).

The decline in animal products consumption has been in red meats and dairy products. Per capita consumption of red meats has fallen 7 percent since 1970-72, with declines in both beef and pork consumption. In 1971, red meat consumption hit an all-time high of 168.8 pounds per capita. The 1984 consumption was 153.6 pounds, 0.6 pound less than in 1983. Dairy product consumption has declined 8 percent since 1970-72.

Poultry consumption has increased 36 percent in the past 15 years, the largest increase of any food product. Poultry consumption rose 2.1 pounds in 1984, an increase of more than 3 percent in 1 year. Fishery products' relatively small share of total meat consumption has also begun to trend up since 1980-82, from 14.5 to 15.5 pounds per capita.

Figure 4

The Food and Fiber Sector, 1984

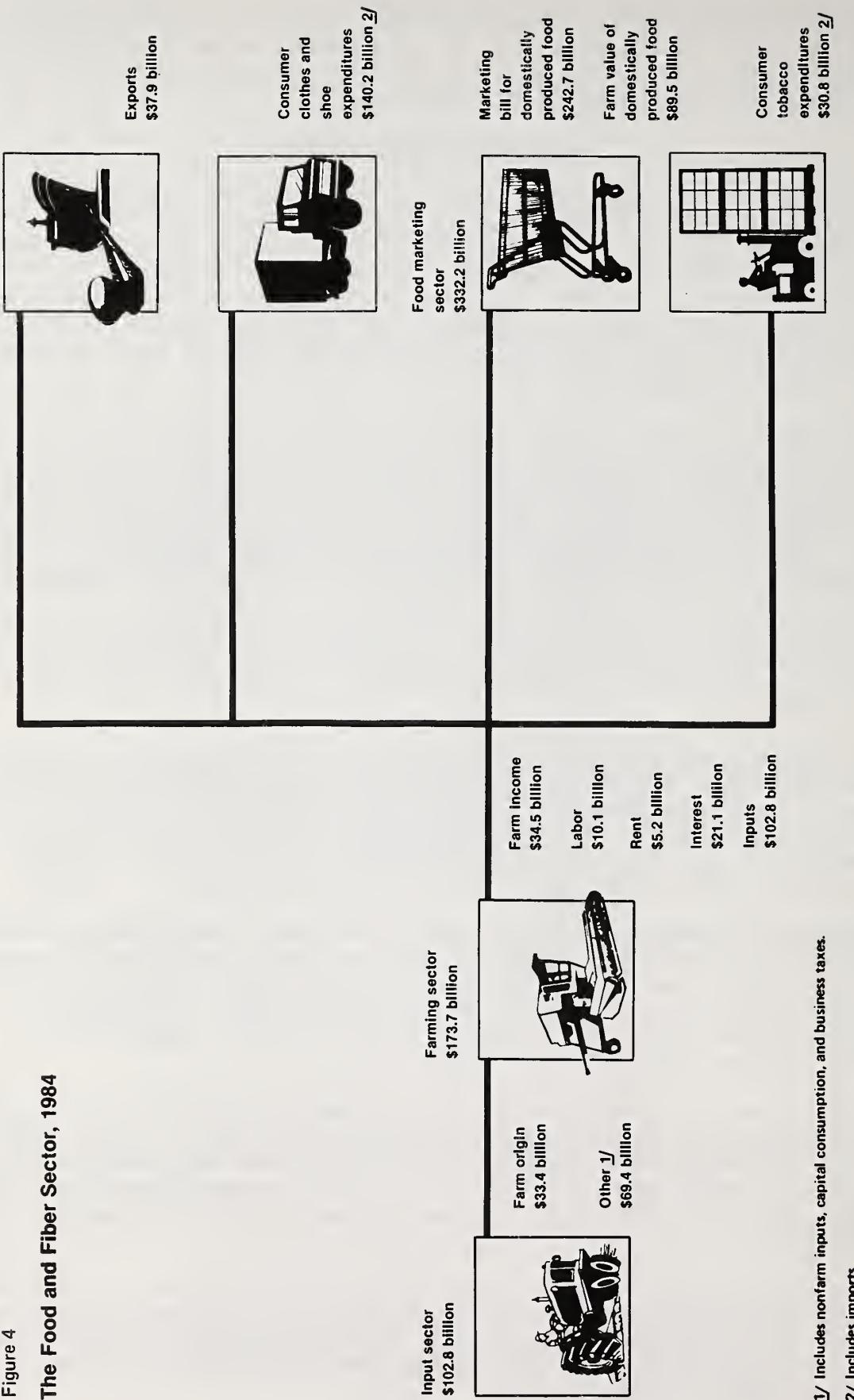


Table 3--Per capita consumption of selected items: retail weight equivalent

Item	: 1970-72	: 1980-82	: 1983	: 1984 1/
	: average	: average	: average	
<u>Pounds</u>				
:				
Total food	: 1,381.5	: 1,393.8	: 1,422.8	: 1,426.3
Animal products	: 614.4	: 578.0	: 583.1	: 585.2
Crop products	: 767.9	: 816.2	: 840.2	: 841.1
Total red meat	: 165.7	: 154.1	: 154.2	: 153.6
Beef and veal	: 86.4	: 78.5	: 80.3	: 80.4
Pork	: 64.5	: 64.1	: 62.2	: 61.7
Lamb	: 2.9	: 1.4	: 1.4	: 1.4
Game and edible offals	: 11.9	: 10.1	: 10.2	: 10.1
Fishery products 2/	: 14.7	: 14.5	: 14.8	: 15.5
Poultry	: 49.6	: 62.6	: 65.4	: 67.5
Eggs	: 39.0	: 33.9	: 33.1	: 33.0
Dairy products	: 335.2	: 305.3	: 303.9	: 306.2
Animal fats (excluding butter)	: 9.9	: 8.3	: 7.8	: 8.5
Vegetable oils	: 40.9	: 48.0	: 49.7	: 48.1
Fruits and melons	: 157.0	: 164.1	: 175.0	: N/A
Vegetables and potatoes	: 273.1	: 292.2	: 297.8	: N/A
Flour and cereal products	: 139.4	: 149.3	: 148.6	: 149.2
Sugar and sweeteners	: 128.8	: 139.1	: 142.1	: 146.6

N/A = not applicable.

1/ Preliminary.

2/ Includes estimates of game fish consumption.

People are eating about 10 percent more crop products than in 1970, at about 840 pounds per capita. Fruit and vegetable consumption in 1983 was up 11 and 9 percent, respectively, since 1970. Fresh fruits and vegetables, frozen vegetables, and fruit juice have all shown increases, while canned fruit and vegetable consumption has declined.

Consumption of vegetable oils has risen sharply over the past 20 years, with most of the increase in soybean oil-based products. Per capita use of salad and cooking oils and baking and frying fats has increased 25 percent since 1970-72, while margarine use has remained relatively constant.

Increases in flour consumption have pushed up total flour and cereal product receipts by 7 percent since 1970-72. Consumption of sugars and sweeteners has risen 14 percent over the same period, thanks to high fructose corn sweetener use which increased from 1 pound per capita in 1970 to 51 pounds in 1984. Refined sugar use declined 34 percent since 1970 to 65.7 pounds per capita in 1984.

The general shift in consumer preferences has dampened the farm incomes of red meat producers and dairy farmers. In contrast, the farm incomes of poultry, soybean, vegetable, and fruit producers have benefited.

Production and Exports

The value of U.S. agricultural exports rose 5 percent to \$38 billion in 1984, the first increase since 1981.^{1/} Exports increased for animal products, cotton, grains and feeds, and nuts. Exports declined for fruits and oilseeds (table 4).

Exports of all animal products, at \$4 billion, constituted 11 percent of total export value. Hides and skins, the largest animal export commodity, accounted for 3 percent of total U.S. agricultural exports.

Corn (\$7 billion), wheat (\$6.8 billion), soybeans (\$5.7 billion), and cotton (\$2.4 billion) accounted for 58 percent of the \$38 billion of agricultural exports. Exports accounted for a large share of the farm income earned by cash grain and cotton farmers.

Cotton export value rose 42 percent to \$2.4 billion, the largest export increase in 1984. Rebounding textile production and lower foreign supplies combined to raise cotton prices and U.S. export volume to about 5.2 million bales, 43 percent of the 1983/84 cotton supply compared with 28 percent in 1982/83.

Corn export value increased 23 percent, as lower beginning-year supplies boosted prices. The total supply of corn dropped from 10.4 billion bushels in 1982/83 to 7.3 billion bushels in 1983/84. Export volume rose 3 percent to 26 percent of the 1983/84 corn supply. China failed to import any corn, but there were sharp increases in exports to the Soviet Union and South Africa. China had imported 1.4 million tons in 1983. Japan remains the largest importer of U.S. corn, accounting for 28 percent in 1984.

Rice exports, at \$900 million, declined for the third consecutive year and were 55 percent of 1981's exports. Good rice crops in South Korea and Indonesia cut into U.S. rice exports. Competition and foreign exchange constraints reduced U.S. rice exports to Nigeria. The United States exported about 41 percent of its 1983/84 rice supply.

The value of wheat exports climbed 9 percent to \$6.8 billion in the face of falling prices because China and the Soviet Union bought more than the year before. Overall volume increased 10 percent; prices received declined 5 percent. The Soviet Union imported 18 percent of all U.S. wheat; China, 9 percent; and Japan, 8 percent. The United States shipped abroad about one third of its 1983/84 wheat supply.

Reduced U.S. supplies, a strong U.S. dollar, and reduced European Community (EC) feeding rates pushed U.S. soybean meal exports down nearly a third to 4.5 million tons worth \$1 billion, the largest export value decline of any U.S. agricultural commodity in 1984 and the smallest meal volume exported since 1977. Soybean exports dropped \$494 million (8 percent), the second largest decline in U.S. export value in 1984. Volume fell 14 percent to 19.5 million tons because of a 25-percent drop in U.S. production and a subsequent 37-percent increase in price. The decline in U.S. soybean production coincided with a decline in world palm oil supplies which triggered the highest soybean oil prices in 10 years. All U.S. vegetable oil exports rose 43 percent in value with only a 10-percent increase in

^{1/} U.S. Department of Agriculture, Economic Research Service. Foreign Agricultural Trade of the United States. Jan./Feb. 1985.

Table 4--Value of U.S. agricultural exports, fiscal years 1980-84

Item	1980	1981	1982	1983	1984	Percent :change, :1983-84
----- <u>Billion dollars</u> -----						
Total agricultural products	40.5	43.8	39.1	34.8	38.0	9
Animal products	3.8	4.0	4.2	3.7	4.2	13
Dairy products	.2	.3	.4	.3	.4	13
Hides and skins	1.0	1.0	1.0	.9	1.3	40
Meats and meat products	.9	.9	1.0	.9	.9	0
Oils and fats	.8	.8	.7	.6	.7	19
Poultry products	.4	.5	.3	.5	.4	-8
Other animal products	.5	.5	.6	.6	.6	0
Cotton, raw, excluding linters	2.9	2.3	2.0	1.7	2.4	42
Grains and feeds	18.3	21.9	17.0	15.0	17.3	15
Feed grains, excluding products	9.1	11.4	7.0	6.9	8.2	25
Corn	7.8	9.9	6.0	5.7	7.0	23
Sorghum grains	1.1	1.1	.7	.8	.8	5
Barley	.2	.3	.2	.3	.3	4
Other	.1	.1	.1	.1	.1	0
Rice	1.3	1.5	1.0	.9	.9	3
Wheat and wheat products	6.7	7.7	7.8	6.5	6.8	9
Feeds, fodders, and other	1.3	1.3	1.2	1.2	1.2	2
Fruits and preparations	1.3	1.5	1.4	1.4	1.3	-8
Nuts and preparations	.8	.6	.6	.5	.5	8
Vegetables and preparations	1.2	1.4	1.4	1.0	1.0	1
Oilseed and products	9.4	9.5	9.5	8.7	8.6	-1
Oilcake and meal	1.7	1.7	1.5	1.6	1.2	-17
Oil, soybean	.7	.5	.5	.4	.7	23
Oil, cottonseed	.2	.2	.2	.1	.1	0
Soybeans	5.9	6.2	6.5	5.9	5.7	-3
Other	.9	.9	.8	.7	.9	29
Tobacco, unmanufactured	1.3	1.4	1.5	1.5	1.4	-4
Other	1.5	1.5	1.5	1.2	1.3	10

volume. The United States exported 37 percent of its 1983/84 soybean supply, the same percentage as in 1982/83.

Income and Employment in the Food and Fiber Sector

One way to measure the total contribution of the farm sector is to use input-output (I/O) analysis. This method allocates input in deflated (constant) dollars on the basis of demand for food and fiber products for further use in the system. An I/O analysis of final user demands (food, clothing and shoes, tobacco, exports, inventory change, and net Government purchases) yields estimates of total business activity measured in constant dollars needed throughout the economy to support the delivery of these demands.

The food and fiber system accounted for 18.5 percent of employment in the domestic U.S. economy and 18 percent of total gross national product (GNP) in 1984 (table 5). Nearly 21 million people worked in the food and fiber sector. The farm sector employed 2.7 million people, 2.4 percent of total U.S. employment and up from 2.5 million in 1983. Nonfarm food and fiber sector employment declined from 18.8 million in 1982 to 18 million in 1983. The decreases followed a large decline in 1983 crop production preceded by 2 years of bumper crops. Because farmers and the Commodity Credit Corporation (CCC) disposed of large inventories in 1983, sales from inventories took the place of new production.

The decline in farm sector value-added from 1982 to 1983 and subsequent recovery in 1984 may appear deceptively steep by usual measures of farm sector income. The drop mirrored the lower level of economic activity (inventory reduction), and the exclusion of income transfers such as Government payments, from the value-added measure. Thus, we excluded the record high 1983 Government payments to farmers because they did not reward real economic activity.

Farm sector employment has trended below the 2.8 to 3 million level set in 1975-79. Total food and fiber employment in food production, processing, and distribution during the past 5 years has been higher than all years except one during 1975-79. However, in percentage terms, both farm and nonfarm components of the food and fiber sector have declined relative to the total U.S. economy. However, a longrun view of value-added indicates that recent value-added levels in the \$58- to \$71-billion (except in 1983) range, remain much higher than the \$42- to \$49-billion range during 1975-78.

I/O data in table 5 for 1975-84 reflect at least two improvements. For the first time, the revised data reflect the 1977 I/O structure of the U.S. economy rather than the 1972-based estimates previously published. Second, past estimates reflected the total output of the food and fiber sector required to support domestic consumption without regard to whether it was produced domestically or imported. The 1977-based estimates separate imported food and fiber from domestically produced food and fiber. The separation was made in the 1977-based estimates because recently imports have played a larger role in the food and fiber system. The import adjustment in 1984 was \$41 billion, revealing why the net level of food and fiber system product is lower than previous estimates.

Farm Income and Expense

Total farm production in 1984 rose 17 percent (table 6). Crop production climbed 26 percent after having fallen a like amount in 1983 as both acres harvested and yields increased. Sharply higher production of corn (up 83 percent), sorghum (78

Table 5--The food and fiber sector and the domestic economy, 1975-84

Item	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
<u>Millions</u>										
Employment:										
Farm sector	2.8	2.9	2.9	2.9	2.9	2.6	2.6	2.6	2.5	2.7
Nonfarm sector	16.9	17.1	17.4	17.6	18.3	18.6	18.7	18.8	18.0	18.3
Food processing	1.4	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.5	1.4
Manufacturing	3.2	3.1	3.1	3.2	3.3	3.2	3.3	3.2	3.0	2.9
Transportation, trade, and retailing	5.6	5.7	5.8	5.9	6.2	6.4	6.5	6.5	6.3	6.5
Dining	3.0	3.1	3.1	3.2	3.4	3.4	3.3	3.3	3.4	3.5
All other	3.6	3.7	3.8	3.8	4.0	4.0	4.1	4.1	3.9	4.0
Total food and fiber sector	19.7	20.0	20.3	20.5	21.2	21.2	21.3	21.3	20.6	21.0
Total domestic economy	93.8	96.2	99.0	102.3	105.0	106.9	108.7	110.2	111.6	113.5
<u>Percent</u>										
Farm sector	3.0	3.0	3.0	2.8	2.8	2.5	2.4	2.3	2.3	2.4
Nonfarm sectors	18.0	17.8	17.6	17.2	17.4	17.4	17.2	17.0	16.2	16.1
Total food and fiber sector	21.0	20.8	20.5	20.0	20.2	19.9	19.6	19.4	18.4	18.5
Total domestic economy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Billion dollars</u>										
Value-added:										
Farm sector	43.1	41.8	43.5	48.8	60.8	58.5	71.0	74.9	51.2	67.3
Nonfarm sectors	274.5	303.9	333.9	358.7	398.6	439.8	493.8	530.2	542.3	589.5
Food processing	36.5	41.9	45.7	46.5	50.4	56.2	62.4	70.8	71.3	76.9
Manufacturing	55.2	59.4	65.0	69.8	76.5	81.5	91.2	95.2	95.7	102.0
Transportation, trade, and retailing	94.5	104.4	114.3	124.4	138.9	155.3	172.5	183.3	189.0	203.8
Dining	25.0	27.3	30.4	33.5	36.7	39.8	42.5	46.1	50.7	53.3
All other	63.3	70.8	78.6	84.6	96.1	107.0	125.1	134.8	135.5	153.5
Total food and fiber sector	317.6	345.6	377.4	407.5	459.4	498.3	564.8	605.2	593.5	656.8
Total domestic economy	1,549.2	1,718.0	1,918.3	2,163.7	2,417.8	2,631.7	2,954.1	3,069.3	3,304.8	3,662.8
<u>Percent</u>										
Farm sector	2.8	2.4	2.3	2.3	2.5	2.2	2.4	2.4	1.5	1.8
Nonfarm sectors	17.7	17.7	17.4	16.6	16.5	16.7	16.7	17.3	16.4	16.1
Total food and fiber	20.5	20.1	19.7	18.8	19.0	18.9	19.1	19.7	18.0	17.9
Total domestic economy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6--Crop and livestock prices and production, 1981-84

Commodity	Unit	1981	1982	1983	1984 (prelim)	Percent change						
						1982-83	1983-84					
- -Percent- -												
Production												
crops:1/												
Wheat	mil bu	2,785.4	2,765.0	2,419.8	2,595.5	-12.5	7.3					
Rice	mil cwt	182.7	153.6	99.7	137.0	-35.1	37.4					
Corn	mil bu	8,118.7	8,235.1	4,174.1	7,656.2	-49.3	83.4					
Oats	mil bu	509.5	592.6	477.0	471.9	-19.5	-1.1					
Barley	mil bu	473.5	515.9	508.9	596.5	-1.4	17.2					
Sorghum	mil cwt	875.8	835.1	487.5	865.9	-41.6	77.6					
Hay(all)	mil tons	142.5	149.2	140.8	150.8	-5.7	7.1					
Soybeans	mil bu	1,989.1	2,190.3	1,635.8	1,860.8	-25.3	13.8					
Cotton	mil bales	15.6	12.0	7.8	13.0	-35.0	66.7					
Tobacco	mil lbs	2,063.6	1,994.5	1,429.0	1,727.3	-28.4	20.9					
Livestock products:												
Beef	mil lbs	22,214	22,366	23,060	23,418	3.1	1.6					
Veal	mil lbs	415	423	428	479	1.2	11.9					
Pork	mil lbs	15,716	14,121	15,117	14,720	7.1	-2.6					
Broilers	mil lbs	11,992	12,167	12,400	13,011	1.9	4.9					
Turkeys	mil lbs	2,576	2,522	2,649	2,685	5.0	1.4					
Eggs	mil doz	5,822	5,802	5,659	5,705	-2.5	.8					
Milk	bil lbs	133.0	135.5	139.7	135.4	3.1	-3.0					
Prices received by farmers:2/												
Crops:												
Wheat	Dollars/bu	3.88	3.52	3.58	3.46	1.7	-3.4					
Rice	Dollars/cwt	11.94	8.36	8.31	8.32	-.1	.1					
Corn	Dollars/bu	2.92	2.37	2.99	3.05	26.2	2.0					
Oats	Dollars/bu	1.92	1.69	1.54	1.76	-8.9	14.3					
Barley	Dollars/bu	2.73	2.28	2.32	2.44	1.8	5.2					
Sorghum	Dollars/cwt	4.72	4.00	4.89	4.61	22.2	-5.7					
Hay (all)	Dollars/ton	67.67	69.17	73.66	76.08	6.5	3.3					
Soybeans	Dollars/bu	6.92	5.78	6.73	7.02	16.4	4.3					
Cotton	Dollars/lb	.67	.56	.63	.65	13.9	2.8					
Tobacco	Dollars/lb	1.55	1.54	1.47	1.53	-4.5	4.1					
Vege-tables	index											
	1910-14=100	677	629	648	670	3.0	3.4					
Fruit (all)	index											
	1910-14=100	480	647	451	730	-30.3	61.9					
Livestock and products:												
Cattle	Dollars/cwt	58.51	56.97	55.83	57.56	-2.0	3.1					
Calves	Dollars/cwt	64.46	60.18	62.13	60.24	3.2	-3.0					
Hogs	Dollars/cwt	43.41	53.99	46.23	47.24	-14.4	2.2					
Broilers	Dollars/cwt	27.97	26.83	29.24	34.00	9.0	16.3					
Turkeys	Dollars/cwt	38.46	37.53	36.48	47.00	-2.8	28.8					
Eggs	Cents/doz	62.19	58.49	63.03	70.00	7.8	11.1					
Milk	Dollars/cwt	13.76	13.59	13.57	13.45	-.1	-.9					

1/ Production in year produced.

2/ Calendar year simple averages.

Source: "Crop Production, 1984 Summary," and "Agricultural Prices, 1984 Summary," USDA, SRS.

percent), and cotton (67 percent) contributed most to overall crop output. Hay and wheat increased about 7 percent each; only oats showed a decline.

Average prices received by farmers in 1984 were higher for all crop commodities except wheat and sorghum. The price of oats rose by more than 14 percent, while barley increased by about 5 percent and soybeans and tobacco each rose 4 percent. The price index for fruit rose by nearly 62 percent, after a 30-percent decline in 1983. The \$3.05-per-bushel for corn, \$76.08-per-ton for hay, and \$7.02-per-bushel for soybeans were the only crop commodities with higher unit prices than in 1981.

Production increased for most categories of livestock commodities. Broiler output climbed 4.9 percent; veal output increased 11.9 percent; and egg production inched up 1 percent, recovering somewhat from the 2.5-percent decline in 1983. Pork production fell 397 million pounds, and milk output slipped 4.3 billion pounds.

Turkey prices led livestock price increases, gaining nearly 29 percent to 47 dollars per cwt. Hog prices increased by \$1.01 but remained more than \$6 below the average 1982 price level. Many of the average calendar year 1984 prices shown are higher than second-half prices, and also higher than early and midyear 1985 prices, reflecting a declining trend in prices. The current downward price trend for most commodities (other than poultry products, hogs, hay, and soybeans) is much larger when measured in deflated rather than nominal dollars.

Prices Paid and Received

During 1984, inflation, as measured by the Consumer Price Index (CPI), averaged 3.6 percent, up from the 1983 rate of 3.2 percent. As in 1983, the increase in prices paid for farm production items, 1.3 percent, trailed the rate of inflation (table 7). Prices received by farmers for all farm products increased an average of 6 percent. Prices received for crops rose an average of 8.6 percent mainly because of a nearly two-thirds increase (61.5 percent) in fruit prices and about a 6-percent increase in oil-crops. All crop prices increased except the 3-percent decline for food grains and 1-percent decline for tobacco. Fruit prices have been volatile since 1979, the price index ranging from 122 to 197. Vegetables, another highly specialized crop category, experienced much less movement in price indexes, from 110 in 1979 to 136 in 1981. Livestock prices, buoyed by a 14.4-percent increase in poultry and egg prices, averaged 3.5 percent higher than in 1983. The index for meat animals increased 2.7 percent in 1984; however, meat animal prices remained 9 percent less than in 1979. Dairy product prices declined because of continued excess supply.

For the first year since 1978, the growth rate of prices received exceeded both the growth rate of prices paid and the general inflation rate for the economy. The ratio of prices received to prices paid rose from 84 in 1983 to 87 in 1984. Because input requirements varied from commodity to commodity, all farmers did not necessarily benefit equally from this modest turnaround. Prices for both seed and autos and trucks increased 7 percent, and other farm machinery prices rose 5 percent.

Prices for feeder livestock and farm and motor supplies fell by 4 and 3, percent, respectively. Fuels and energy prices continued a downward trend that began in 1982, although the rate of decline in 1984 was less than 1 percent as against 4 percent in 1983. The ratio of prices received to prices paid during the 1980's remains much below the index levels of the two preceding decades (fig. 5).

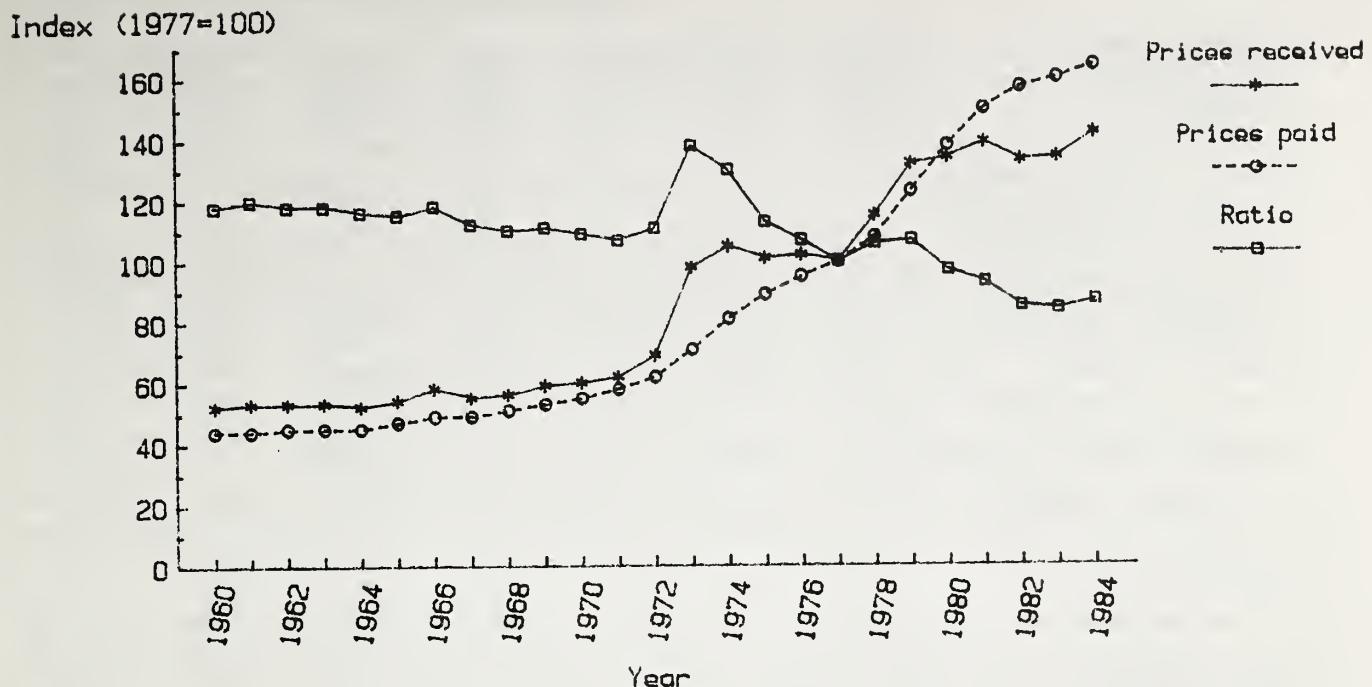
Table 7--Indexes of prices received and paid by farmers, 1979-84

Items							Percent change	
	1979	1980	1981	1982	1983	1984	1982-83	1983-84
:								
: - - - - - 1977=100 - - - - -								
:								
Prices received:								
Crops	116	125	134	121	127	138	5.0	8.6
Food grains	147	165	166	146	148	143	1.4	-3.4
Feed grains and hay	114	132	141	120	143	146	19.2	2.1
Oil crops	103	102	110	88	102	109	15.9	5.9
Cotton	96	114	111	92	104	108	13.0	3.8
Tobacco	118	125	140	153	155	153	1.3	-1.3
Fruit (all)	144	124	130	175	122	197	-30.3	61.5
Vegetables	110	113	136	126	130	135	3.2	3.8
:								
Livestock	147	144	143	145	141	146	-2.8	3.5
Meat animals	166	156	150	155	147	151	-5.2	2.7
Poultry and eggs	111	112	116	110	118	135	7.3	14.4
Dairy products	124	135	142	140	140	139	0	-.7
:								
All farm products	132	134	139	133	134	142	.8	6.0
:								
Prices paid:								
Production items	125	138	148	150	153	155	2.0	1.3
Feed	110	123	134	122	134	135	9.8	.7
Feeder livestock	185	177	164	164	160	154	-2.4	-3.8
Seed	110	118	138	141	141	151	0	7.1
Fuels and energy	137	188	213	210	202	201	-3.8	0
Fertilizer	108	134	144	144	137	143	-4.9	4.4
Agricultural chemicals	96	102	111	119	125	128	5.0	2.4
Farm and motor supplies	115	134	147	153	152	147	-.7	-3.3
Auto and trucks	117	123	143	159	170	182	6.9	7.1
Tractors and spec. mach.	122	136	152	165	174	181	5.5	4.0
Other farm machinery	119	132	146	160	171	180	6.9	5.3
Building and fencing	118	128	134	135	138	138	2.2	0
Services and cash rent	117	125	137	145	146	148	.1	1.4
Farm wage rates	117	126	137	144	148	150	2.8	1.4
Farm origin items	137	143	145	139	144	144	3.6	0
Nonfarm-origin items	120	137	152	160	165	168	3.1	1.8
Production items, interest, taxes, and wage rates	125	139	151	155	159	161	2.5	1.3
Commodities and services interest, taxes and wages	123	138	150	157	161	164	1.9	3.8
:								
Ratio of prices received to prices paid 1/	107	97	93	85	84	87	-1.1	2.8

1/ Index of prices received by farmers for all farm products divided by prices paid by farmers for commodities, services, interest, taxes, and wages.

Source: U.S. Department of Agriculture, Statistical Reporting Service, Agricultural Prices.

Figure 5--Indexes of prices received and paid by farmers, 1960-84



Farm Income and Cashflow Statement

The general economic performance of the U.S. farm sector remained sluggish in 1984 compared with the general economic performance of the U.S. economy. The \$4.5 billion from PIK program disbursements in 1983 and 1984 and another \$4 billion in direct Government payments provided 5.5 percent of the sector's gross cash flow (table 8). These payments helped maintain a cash flow and allowed farmers to finance operations from internally generated funds. High real interest rates, other farm expenses, declining export volume, and generally low commodity prices reduced farm earnings.

The \$8.4 billion in 1984 Government payments was \$900 million less than the record nominal level of 1983. However, a 4-percent increase in cash receipts from marketings of crops and livestock combined with the recovery in machine hire and customwork income to soften the impact of the decline in payments. Gross cash income rose to \$153.3 billion, 3.5 percent over the revised 1983 level and the strongest rise in nominal gross cash income since 1980.

Gross farm income includes gross cash income, imputed nonmoney income, and the value of the change in commodity inventories. The \$12.9 billion of estimated nonmoney income consisted of imputed gross rental value of farm dwellings and the value of home consumption of self-produced foods. Gross rental value declined for the second consecutive year, falling slightly to \$11.9 billion, which mirrored the decline in land and building values. This decline explains why the rental

Table 8--Farm income and cashflow statement, 1979-84*

Item	1979	1980	1981	1982	1983	1984
:						
					<u>Billion dollars</u>	
Farm income sources:	:					
Cash receipts	: 131.5	139.8	142.1	143.0	136.3	141.8
Crops 1/	: 62.3	71.8	72.9	72.7	66.8	69.1
Livestock	: 69.2	68.0	69.2	70.3	69.4	72.7
:						
Cash Government payments	: 1.4	1.3	1.9	3.5	4.1	4.0
Value of PIK commodities	: 0	0	0	0	5.2	4.5
Total direct payments	: 1.4	1.3	1.9	3.5	9.3	8.4
:						
Farm-related income 2/	: 2.2	2.3	2.5	2.6	2.5	3.0
Gross cash income 3/	: 135.1	143.3	146.5	149.0	148.1	153.3
:						
Nonmoney income 4/	: 10.5	12.2	13.7	14.0	13.1	12.9
Realized gross income	: 145.6	155.5	160.2	163.0	161.2	166.2
:						
Value of inventory change	: 5.0	-5.9	5.8	-1.4	-10.6	7.8
:						
Total gross income	: 150.7	149.6	166.0	161.6	150.6	174.0
:						
Production expenses:	:					
Cash expenses 5/ , 6/	: 98.1	106.1	110.7	110.7	109.8	114.1
Total expenses	: 119.0	129.4	136.1	136.9	135.6	139.5
:						
Income statement:	:					
Net cash income: 1/ , 6/	:					
Nominal	: 37.0	37.2	35.8	38.3	38.3	39.2
Deflated, 1972 dollars 7/	: 22.6	20.9	18.3	18.5	17.8	17.6
:						
Net farm income: 1/	:					
Nominal total net	: 31.7	20.2	29.8	24.7	15.0	34.5
Deflated net, 1967 dollars 8/	: 14.6	8.2	11.0	8.5	7.0	11.1
Deflated net, 1972 dollars 7/	: 19.4	11.3	15.3	11.9	5.0	15.6
:						
Off-farm income	: 33.8	35.1	36.9	37.9	38.8	40.0
:						
Change in loans outstanding 5/	: 23.8	15.2	15.6	7.3	3.5	-1.5
Real estate	: 13.0	9.4	9.3	4.0	2.5	-0.8
Nonreal estate 9/	: 10.9	5.9	6.2	3.3	1.0	-0.7
:						
Rental income	: 5.6	5.8	5.8	5.7	4.6	5.4
:						
Gross cash flow	: 66.4	58.2	57.2	51.3	46.4	43.2
:						
Capital expenditures 6/	: 19.9	18.0	16.8	13.7	13.0	12.5
:						
Net cash flow 1/ , 5/	: 46.5	40.2	40.4	37.6	33.3	30.7

* Totals may not add due to rounding.

1/ Includes net CCC loans.

2/ Income from sales of forest products, customwork, machine hire, farm recreational activities, and other miscellaneous sources.

3/ Includes cash marketing receipts, direct Government payments, and farm related income.

4/ Value of home consumption of farm products and imputed rental value of farm dwellings.

5/ Excludes perquisites to hired labor and depreciation of farm capital.

6/ Excludes farm households.

7/ Deflated by the GNP implicit price deflator.

8/ Deflated by the CPI (urban).

9/ Excludes CCC loans.

benefits farmers received from their dwellings were worth less than the previous year's. The value of home consumption increased 2 percent in 1984 to \$988 million. Livestock consumption accounted for about 84 percent of all onfarm consumption of self-produced commodities.

The value of the change in farm inventories totaled \$7.8 billion in 1984, following the drought- and PIK-induced decline of \$10.6 billion in 1983. Feed grain, oil crop, and cotton increases helped replenish depleted onfarm commodity stocks. Crop inventories increased \$9.5 billion, and livestock inventories dropped \$1.7 billion mainly because of continued liquidation of cattle herds.

Farm net cash income rose while net cash flow fell (table 8). Gross cash income increased, causing net cash income to increase \$900 million from the 1983 level of \$38.3 billion, despite a 4-percent increase in cash expenses. Cash expenses rose to \$114.1 billion because of a 1-percent increase in prices paid by farmers for inputs and a 2-percent rise in quantities of inputs used.

Cash flow consisted of cash farm income plus net borrowing. Net cash income accounted for 91 percent of gross cash flow compared with 63 percent as recently as 1981. The difficulty in borrowing funds has reduced the financing options of many farmers, making the farm business more vulnerable to swings in internally generated income.

Net farm income, a measure of income generated from a given year's production and price levels, rose to a record \$34.5 billion, more than double the \$15-billion income of 1983. This income series includes imputed rental value of housing, home consumption, and nonmoney expenses, such as depreciation and nonmoney income generated by inventory changes. Had yearend inventories brought 1984 average market prices, then the expected net farm income of \$34.5 billion would have been achieved. However, farmers chose to add to their inventories because of rapidly declining commodity prices during the fall of 1984 instead of maintaining the 1983 ending inventory levels. In 1972 dollars, net farm income totaled \$15.6 billion, the highest since 1981's \$15.3 billion.

Historical Variations

In 1972 dollars, gross cash income failed to rise for the fifth consecutive year, reflecting the drop in deflated 1984 cash receipts (table 8). High real interest rates and strong machinery prices relative to net income were key reasons for the sharp decline in capital expenditures since the 1979 peak.

From the 1940's to the start of the 1970's, deflated cash receipts changed little, averaging \$50.3 billion in the 1940's, \$51.3 billion in the 1950's, and \$52.9 billion in the 1960's. The boom of the 1970's, however, provided both higher average deflated cash receipts (\$70.1 billion) and increased instability (reflected by a higher coefficient of variation than during the 1950's and 1960's) in deflated receipts. The farm sector may be in transition following the expansion of the 1970's. It is not known at what level deflated receipts and income will settle before presumably resuming the historical slow-growth pattern of the 1950's and 1960's.

Income Indicators Defined

The aggregate accounts reveal the sector's contribution to the national economy, the general composition of the sector's output, and the overall financial condition of the sector. Aggregate farm income and cashflow measures combine with balance

sheet data and other financial measures of the sector's well-being to depict the well-being of a particular group of farmers.

Net cash income is the difference between gross cash income from farming activities and cash expenses incurred during a calendar year. This measure includes only cash transactions, share rent, and PIK payments. Net cash income is the total income that farmers receive (or choose to receive) in a given calendar year, regardless of the amount of production or the year the marketed output is produced. This is the income available to farmers within the sector for purchasing assets, such as machinery or land for retiring loans and for paying off other expenses, including those of the farm household.

Net cash flow from net cash income and borrowing measures the total funds available to the farm production sector for meeting shortrun financial obligations such as repayment of operating and machinery loans, operating capital, and household consumption. Net cash flow equals net cash income (the largest component) plus net changes in loans outstanding, net rent paid to all landlords, and net changes in farmers' currency and demand deposits, less capital expenditures (excluding those for operator dwellings). Cash flow's importance hinges on the ability of the farmer to meet current obligations. Although a farmer may have a strong equity position, the farm's cash flow may be deficient during some years because of, for example, low commodity prices or a localized drought, creating substantial financial stress. If not corrected through increased borrowing, this cash deficiency may lead to business failure.

Net farm income measures the income generated from a given calendar year's production and price levels. Net farm income comes from subtracting total farm production expenses from gross farm income, including the value of the change in commodity inventories. Net farm income includes noncash income such as inventory change and noncash expenses such as depreciation. Net farm income approximates the net value of agricultural production, regardless of whether the commodities are sold, fed, or placed in inventory during the year. It does not necessarily represent the income that farm operators have at their disposal. Unlike the net cash and net cashflow accounts, this income is a production-oriented series whose purposes are to account for farm output in a given calendar year and to determine the contributions to national income and production.

Income Distribution by Type of Farm

Disaggregation of income by receipts and expense components reveals a farm sector that increasingly consists of highly specialized production technologies.

Crop Farms

The 1984 estimate of net cash income for crop farms is \$24.3 billion, indicating a 7-percent decrease from the 1983 level of \$26 billion (table 9). Reduced PIK entitlements and increased cash expenses caused the decline. On a per farm basis, net cash income for crop farms was an estimated \$22,652, down 5 percent. However, comparisons between 1984 and 1982 net cash income estimates for crop producers showed a 4-percent increase of approximately \$900 million (fig. 6).

Net farm income of crop producers was an estimated \$24.5 billion, more than doubling the 1983 estimate of \$9 billion (fig. 7, table 9). Changes in the value of inventories, increasing from minus \$8.9 billion in 1983 to \$8.2 billion, keyed this increase.

Table 9--Net farm income and net cash farm income, by type of farm, 1982-84

Item	: 1982	: 1983	: 1984	: 1982-83	: 1983-84
	:				
	: -	<u>Million dollars</u>	- -	- -	<u>Percent</u> - - -
	:				
All crops:	:				
Net cash farm income	: 22,420	26,037	24,306	11	-7
Net farm income	: 14,666	9,038	24,482	-38	171
Cash grain farms:	:				
Net cash farm income	: 7,733	7,263	8,012	-6	10
Net farm income	: 1,643	-6,379	7,871	-488	223
Cotton farms:	:				
Net cash farm income	: 2,435	1,677	1,361	-31	-19
Net farm income	: 743	538	1,674	-28	211
Tobacco farms:	:				
Net cash farm income	: 1,410	1,069	994	-24	-7
Net farm income	: 1,281	491	1,025	-62	109
Other field crop farms:	:				
Net cash farm income	: 3,071	5,764	4,419	88	-23
Net farm income	: 3,692	5,908	5,275	60	-11
Vegetable and melon farms:	:				
Net cash farm income	: 3,440	4,780	3,813	39	-20
Net farm income	: 2,899	4,189	3,378	45	-20
Fruit and tree nut farms:	:				
Net cash farm income	: 2,324	1,757	1,720	-24	-2
Net farm income	: 1,889	1,280	1,289	-32	1
Horticultural specialty farms:	:				
Net cash farm income	: 1,778	2,129	2,703	20	27
Net farm income	: 1,569	1,911	2,489	22	30
General crop farms:	:				
Net cash farm income	: 1,229	1,598	1,284	30	-20
Net farm income	: 950	1,091	5,169	15	374
All livestock:	:				
Net cash farm income	: 14,857	12,282	14,923	-17	22
Net farm income	: 10,056	5,961	10,047	-41	69
Cattle, hog, and sheep farms:	:				
Net cash farm income	: 5,835	3,808	4,750	-35	25
Net farm income	: 4,342	1,239	2,932	-71	137
Dairy farms:	:				
Net cash farm income	: 6,539	6,234	5,505	-5	-12
Net farm income	: 4,197	3,631	3,302	-13	-9
Poultry and egg farms:	:				
Net cash farm income	: 1,924	1,634	3,909	-15	139
Net farm income	: 1,786	1,440	3,832	-19	166
Animal specialty farms:	:				
Net cash farm income	: 324	400	557	23	39
Net farm income	: 377	415	579	10	40
General livestock farms:	:				
Net cash farm income	: 235	206	202	-12	-2
Net farm income	: -645	-764	-599	18	22
Total all farms:	:				
Net cash farm income	: 38,277	38,317	39,229	0	2
Net farm income	: 24,622	14,997	34,529	-39	130

Figure 6--Net cash income per farm, by type of farm
1982-84

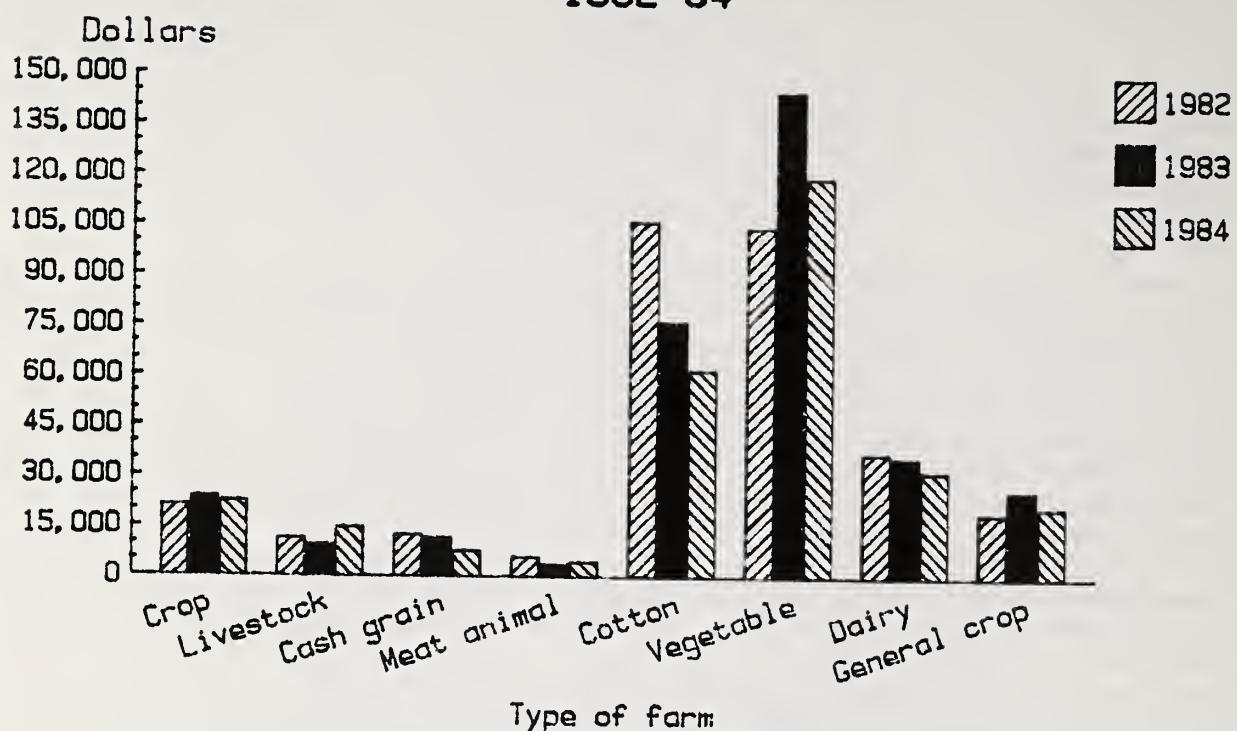


Figure 7--Net farm income per farm, by type of farm
1982-84



Cash grain farms accounted for the largest share, about 33 percent, of both net cash and net farm income estimates for crop producers. Despite the overall decrease in net cash income, cash grain farms realized a 12-percent increase in per farm net cash income from 1983 levels (table 10).

Per farm net cash income estimates for cotton producers showed a 19-percent decrease from 1983 to \$61,864 per farm. This decrease was due to reductions in total cash receipts (3 percent) and Government payments (21 percent) and increases in expenses (7 percent). Net farm income for cotton farms, however, increased \$141 million from 1983 to \$1.7 billion. The increase in cotton farm net farm income is primarily due to increases in inventory.

Tobacco farms experienced a 7-percent decline in net cash income from 1983 to \$1.0 billion and an increase in net farm income of 109 percent to \$1 billion in 1984. Other field crop farms had 23 and 11 percent declines in net cash and net farm incomes in 1984, to \$4.4 and \$5.3 billion, respectively.

Vegetable and melon farms earned the highest per farm net cash and net farm income of all crop farms, \$119,156 and \$105,577, respectively (table 10). However, these amounts declined from 1983 estimates because of increases in fertilizer and hired labor expenses.

Cash and net farm income per fruit and tree nut farm were \$19,545 and \$14,652, respectively, down 1 percent and up 2 percent. Net cash and net farm income estimates for horticultural specialty farms were an estimated \$2.7 and \$2.5 billion, respectively (fig. 6, table 10).

Livestock

Net cash income on livestock farms reached an estimated \$14.9 billion, up 22 percent from the 1983 level of \$12.3 billion. Net farm income for livestock producers increased 69 percent from the 1983 estimate to \$10 billion.

Poultry and egg farms constituted 37 percent of net cash income for all livestock farms, the highest of any livestock enterprise. On a per farm basis, poultry and egg producers had an estimated \$88,841 and \$87,101 in net cash and net farm income, respectively up 139 and 166 percent per poultry and egg farm net cash and net farm income.

Cattle, hog, and sheep farmers saw net cash income rise 25 percent to \$4.8 billion. Gross income and production expenses both increased. Net farm income averaged a 137-percent increase to \$3,103 (fig.7, table 11).

Value of Sales Class

Commodity sales by value of sales class varied extensively from commodity to commodity (table 12). Agricultural Census data for 1982 (only recently available) showed the greatest proportion of sales on farms marketing more than \$100,000 for nearly all commodities. In several categories (vegetables, fruits and nuts, nursery and greenhouse, and poultry), farms with sales of \$500,000 accounted for more than half of all total sales of those commodities. Among the farms with sales of less than \$9,999, only tobacco farms accounted for more than 10 percent of commodity sales. The bulk of the sales of cash grain, wheat, soybeans, and sorghum (36, 31, 34, and 24 percent, respectively) was characterized in the \$100,000 to \$249,999 sales class, with the second greatest concentration of those

Table 10--Net farm income and cash farm income, crop farms, 1984 1/

Item	Total, all farms	Total, crop farms	Cash grain farms	Cotton farms	Tobacco farms	Other field crop farms	Vegetable and melon farms	Fruit and tree farms	Horticultural farms	General mostly farms
<u>Thousands</u>										
<u>Million dollars</u>										
Farms	2,333	1,073	601	22	135	105	32	88	30	60
<i>Crop cash receipts: 2/</i>										
Grain	36,468	31,557	29,009	486	294	638	184	50	19	877
Cotton and cottonseed	3,359	3,293	307	2,480	3	36	87	36	1	343
Tobacco	2,841	2,581	108	1	2,272	12	4	0	2	182
Field seeds, hay, forage, and silage	2,290	1,839	364	111	15	970	49	21	6	303
Vegetables, sweet corn, and melons	7,141	7,007	219	81	17	126	5,836	152	29	547
Fruits, nuts, and berries	6,265	6,200	27	17	1	19	95	5,905	13	123
Nursery and greenhouse products	4,984	4,974	12	2	1	7	28	17	4,862	45
Other crops	5,748	5,555	486	61	54	4,122	120	28	6	678
Subtotal, crop receipts	69,096	63,006	30,532	3,239	2,657	5,930	6,403	6,209	4,938	3,098
<i>Livestock cash receipts:</i>										
Poultry and products	12,188	66	36	0	3	1	2	5	2	17
Dairy products	17,927	261	173	1	13	8	3	2	1	60
Cattle and calves	30,501	2,851	2,072	49	149	136	24	37	6	378
Hogs and pigs	9,691	1,364	1,135	5	37	23	6	4	1	153
Sheep, lambs, and wool	539	63	39	1	1	8	1	1	0	12
Other livestock	1,892	57	29	4	3	7	1	3	1	9
Subtotal, livestock receipts	72,738	4,662	3,484	60	206	183	37	52	11	629
Direct Government payments	3,971	3,414	2,913	251	29	67	25	8	2	120
Value of PIK commodities 3/	4,459	3,942	3,097	531	31	74	36	12	2	159
Total cash receipts 4/	150,264	75,024	40,025	4,081	2,923	6,254	6,501	6,281	4,953	4,006
Other farm-related income 5/	3,046	2,789	476	52	33	1,784	67	50	7	320
Noncash income 6/	12,888	5,621	2,962	99	494	622	219	720	179	326
Value of inventory change	7,827	8,188	5,803	1,007	274	574	85	28	6	4,099
Gross cash income 7/	153,310	77,813	40,501	4,133	2,956	8,038	6,568	6,331	4,960	4,326
Gross farm income 8/	174,025	91,622	49,266	5,239	3,724	9,234	6,872	7,079	5,145	8,751
Cash expenses 9/, 10/	114,081	53,507	32,489	2,772	1,962	3,619	2,755	4,611	2,257	3,042
Total production expenses	139,496	67,140	41,395	3,565	2,699	3,959	3,494	5,790	2,656	3,582
Net cash income, total 1/, 6/	39,229	24,306	8,012	1,361	994	4,419	3,813	1,720	2,703	1,284
Net farm income, total 1/	34,529	24,482	7,871	1,674	1,025	5,275	3,378	1,289	2,489	5,169
Net cash income, per farm	16,815	22,652	13,331	61,864	7,363	42,086	119,156	19,545	90,100	21,400
Net farm income, per farm	14,800	22,816	13,097	76,094	7,592	50,239	105,577	14,652	82,965	86,154
<i>Farm production expenses:</i>										
Livestock purchased	9,469	651	484	8	24	32	5	6	1	91
Feed	20,412	1,008	742	14	47	49	10	16	4	128
Seeds	3,548	2,677	1,820	100	54	225	128	57	169	124
Fertilizer	8,897	6,455	4,488	275	220	487	286	289	59	351
Agricultural chemicals	4,943	4,110	2,395	354	98	272	265	463	53	210
Energy and petroleum	9,285	5,552	3,392	342	270	418	205	330	294	301
Hired farm labor	13,115	7,734	2,326	538	358	796	1,084	2,007	1,216	509
Property taxes	4,407	2,483	1,645	106	91	185	77	206	46	127
Depreciation	23,020	12,150	8,422	708	660	242	584	882	191	461
Interest paid on-										
Real estate debt	10,733	5,765	3,707	244	199	417	173	569	142	314
Nonreal estate debt	10,396	5,213	3,478	304	153	367	177	319	126	289
Repairs	7,860	4,583	3,207	204	217	65	187	209	165	329
Rent	4,757	3,494	2,721	147	141	158	96	78	25	128
Other expenses	8,654	4,165	2,568	221	167	246	217	359	165	222
Total production expenses	139,496	67,140	41,395	3,565	2,699	3,959	3,494	5,790	2,656	3,582

1/ Preliminary. 2/ Includes net CCC loans. 3/ PIK quantities valued at original loan rates. The stock variable is considered a flow for this analysis. 4/ Crop cash receipts plus livestock cash receipts plus Government payments. 5/ Income from customwork, machine hire, forest product sales, and other income. 6/ Value of home consumption of farm products and imputed gross rental value of farm dwellings. 7/ Total cash receipts plus other farm-related income. 8/ Total cash receipts plus other farm-related income plus noncash income plus value of inventory change. 9/ Excludes perquisites to hired labor and depreciation. 10/ Excludes farm households.

Table 11--Net farm income and net cash income, livestock farms, 1984 1/

Item	Total, all farms	Total, livestock farms	Cattle, hog, and sheep farms	Dairy farms	Poultry and egg farms	Animal specialty farms	General farms, primarily livestock
<u>Thousands</u>							
Farms	2,333	1,260	945	172	44	68	31
<u>Million dollars</u>							
Crop cash receipts: 2/							
Grain	36,468	4,911	3,612	801	154	14	330
Cotton and cottonseed	3,359	66	34	20	3	4	5
Tobacco	2,841	260	123	83	22	7	25
Field seeds, hay, forage, and silage	2,290	451	308	101	13	5	24
Vegetables, sweet corn, and melons	7,141	134	59	42	19	1	13
Fruits, nuts, and berries	6,265	65	31	17	14	1	2
Nursery and greenhouse products	4,984	10	6	2	2	0	0
Other crops	5,748	193	147	22	14	0	10
Subtotal, crop receipts	69,096	6,090	4,320	1,088	241	32	409
Livestock cash receipts:							
Poultry and products	12,188	12,122	85	27	11,941	1	68
Dairy products	17,927	17,666	300	16,829	59	1	477
Cattle and calves	30,501	27,650	25,730	1,547	129	23	221
Hogs and pigs	9,691	8,327	7,956	168	74	1	128
Sheep, lambs, and wool	539	476	467	4	2	1	2
Other livestock	1,892	1,835	129	10	3	1,674	19
Subtotal, livestock receipts	72,738	68,076	34,667	18,585	12,208	1,701	915
Direct Government payments	3,971	557	435	83	15	1	23
Value of PIK commodities 3/	4,459	517	385	88	17	2	25
Total cash receipts 4/	150,264	75,240	39,807	19,844	12,481	1,736	1,372
Other farm-related income 5/	3,046	257	187	42	13	5	10
Noncash income 6/	12,888	7,267	5,123	1,103	278	568	195
Value of inventory change	7,827	-361	-603	128	44	5	64
Gross cash income 7/	153,310	75,497	39,994	19,886	12,494	1,741	1,382
Gross farm income 8/	174,025	82,403	44,514	21,117	12,816	2,314	1,641
Cash expenses 9/, 10/	114,081	60,574	35,244	14,381	8,585	1,184	1,180
Total production expenses	139,496	72,356	41,582	17,815	8,984	1,735	2,240
Net cash income, total 1/, 6/	39,229	14,923	4,750	5,505	3,909	557	202
Net farm income, total 1/	34,529	10,047	2,932	3,302	3,832	579	-599
Net cash income, per farm	16,815	11,844	5,026	32,006	88,841	8,191	6,516
Net farm income, per farm	14,800	7,974	3,103	19,198	87,101	8,516	-19,324
Farm production expenses:							
Livestock purchased	9,469	8,818	7,332	384	889	156	57
Feed	20,412	19,404	8,385	4,940	5,600	277	202
Seeds	3,548	871	519	295	16	3	38
Fertilizer	8,897	2,442	1,487	800	48	12	95
Agricultural chemicals	4,943	883	546	224	21	4	38
Energy and petroleum	9,285	3,733	2,136	1,119	284	90	104
Hired farm labor	13,115	4,281	1,986	1,476	499	233	87
Property taxes	4,407	1,924	1,434	313	49	70	58
Depreciation	23,020	10,870	5,931	3,074	399	479	987
Interest paid on--							
Real estate debt	10,733	4,968	2,968	1,419	313	145	123
Nonreal estate debt	10,396	5,183	3,237	1,486	223	101	136
Repairs	7,860	3,277	2,066	957	72	52	130
Rent	4,757	1,263	975	223	14	5	46
Other expenses	8,654	4,489	2,580	1,105	557	108	139
Total production expenses	139,496	72,356	41,582	17,815	8,984	1,735	2,240

1/ Preliminary. 2/ Includes net CCC loans. 3/ PIK quantities valued at original loan rates. The stock variables is considered a flow for this analysis. 4/ Crop cash receipts plus livestock cash receipts plus Government payments. 5/ Income from customwork, machine hire, forest product, and other income. 6/ Value of home consumption of farm products and imputed gross rental value of farm dwellings. 7/ Total cash receipts plus other farm-related income. 8/ Total cash receipts plus other farm-related noncash income plus value of inventory change. 9/ Excludes perquisites to hired labor and depreciation. 10/ Excludes farm households.

Table 12—Commodity sales, by value of sales class, 1982 1/

Commodity	\$500,000:	\$250,000:	\$100,000:	\$40,000:	\$20,000:	\$10,000:	Less : All
	or	to	to	to	to	to	than : farms
	more	\$499,999:	\$249,999:	\$99,999:	\$39,999:	\$19,000:	\$9,999:
<u>Percent</u>							
Cash for grain	11.4	18.1	35.7	23.0	7.0	3.0	1.8
Wheat	13.3	15.6	31.1	25.3	8.9	3.8	2.0
Soybeans	8.8	16.6	34.4	25.1	8.5	4.0	2.6
Sorghum for grain	12.0	16.4	31.5	26.0	8.7	3.6	1.8
Cotton and cottonseed	46.5	19.1	19.4	10.3	3.0	1.2	.5
Tobacco	5.1	10.1	24.1	24.2	14.4	10.7	11.4
Vegetables and melons	69.3	10.4	9.6	5.5	2.3	1.4	1.5
Fruits, nuts, and berries	52.0	13.3	15.8	10.6	4.3	2.2	1.8
Nursery and greenhouse products	62.7	13.4	12.5	6.3	2.5	1.4	1.2
Poultry and poultry products	51.4	21.6	21.0	4.9	.7	.2	.2
Dairy products	19.1	14.8	36.2	24.8	4.1	.8	.2
Cattle and calves	49.3	10.4	15.1	11.2	5.2	3.7	5.1
Hogs and pigs	17.5	19.9	33.9	18.7	5.5	2.5	2.0
Sheep, lambs, and wool	33.0	11.5	18.2	14.8	8.0	5.3	9.2

1/ Source: 1982 Census of Agriculture, U.S. Summary, Vol. 1, Part 51.

distributed the most evenly of all commodities among the seven sales classes. The smallest concentration of tobacco sales was in the \$500,000 or more sales class. Approximately 46 percent of cotton and cottonseed sales occurred on farms with sales of \$500,000 or more. Farms with sales of less than \$40,000 accounted for only 5 percent of all cotton sales.

Livestock sales were most heavily concentrated on farms with sales greater than \$100,000. Ninety-four percent of poultry, 70 percent of dairy, 75 percent of cattle and calves, 71 percent of hog, and 63 percent of sheep, lamb, and wool sales occurred in those classes. In the sales class of \$40,000 to \$99,999, dairy products sold most, at 25 percent, while poultry sold least, at 5 percent. Twenty-three percent of total sheep, lamb, and wool sales populated the three lower sales classes, providing the highest share of sales in the less than \$40,000 classes of any livestock commodity. Poultry had the lowest percentage of sales in these sales classes at 1.1 percent.

The top 1 percent of farms with sales exceeding \$500,000 accounted for 48 percent of net farm income in 1983 (table 13). Another 3.5 percent of farms with sales of \$200,000 to \$499,999 accounted for 18 percent of farm income. Together, farms in the top two sales classes made up 4.5 percent of farms but accounted for two-thirds (67 percent) of net farm income. Farms falling into the largest sales category tended to produce red meat, vegetables, fruit, nursery and greenhouse products, and poultry. These farms were relatively profitable, accounting for 27 percent of gross farm income but 22 percent of production expenses. Large farmers earned 4.5 percent of off-farm income received by all U.S. farm families in 1983.

Cash Receipts

Total cash receipts from marketings of farm products increased 4.1 percent to \$141.8 billion (table 14).^{2/} The average price received for farm products rose 6 percent. Livestock receipts rose 4.7 percent to \$72.7 billion when higher average prices received for livestock products outpaced a decline in marketings. Higher average crop prices and slightly lower marketings led to a 3.4-percent rise to \$69.1 billion in crop receipts.

Dairy cash receipts fell more than any other commodity in the livestock sector. A 1-percent decrease in prices combined with 3-percent lower marketings to reduce cash receipts from \$18.8 billion to \$17.9 billion. This marks the first decline in dairy cash receipts since 1962. Cash receipts for all other livestock products, except pork, lamb, and veal, increased. Poultry and egg receipts grew most at 21.6 percent. Poultry and egg prices averaged 14-percent increases in 1984, accounting for much of the increase in cash receipts. Cash receipts for red meat products rose 4.8 percent to \$40.8 billion, mostly because cattle receipts increased 7.4 percent to \$28.6 billion in 1984. The average farm price for cattle rose to \$57.56 per cwt from \$55.83 per cwt, the lowest nominal level since 1978. Hog receipts remained virtually unchanged from the \$9.8 billion recorded in 1983, while lamb receipts rose 9 percent.

Increased crop cash receipts in 1984 came from higher average prices, while crop marketings declined. Of the major crop groups, food grain and tobacco cash receipts fell from 1983 levels. All other major crop categories increased, as did all major crop production except fruit and nuts.

^{2/} Cash receipts are based on commodity marketings for a given year. Production and marketings differ because many commodities are not necessarily marketed entirely in the same calendar year in which they are produced. See table 15 for marketing distribution.

Table 13--Farms, gross farm income, production expenses, and net farm income (excluding households) before inventory adjustment, selected years, 1960-83

Year	\$500,000	\$200,000	\$100,000	\$40,000	\$20,000	Less	All
	and	to	to	to	to	than	farms
	over	\$499,999	\$199,999	1/	\$99,999	\$39,999	\$20,000:
Farms:							
1960							
1960	N/A	N/A	0.6	2.3	5.7	91.4	100.0
1970	.1	.5	1.2	5.6	10.3	82.3	100.0
1980	1.0	3.4	7.4	16.0	11.5	60.7	100.0
1982	1.0	3.6	7.8	16.4	11.4	59.8	100.0
1983	1.0	3.5	7.5	16.1	11.4	60.0	100.0
Gross farm income:							
1960							
1960	N/A	N/A	16.0	14.6	17.7	51.7	100.0
1970	13.7	7.7	10.1	20.7	18.7	29.1	100.0
1980	27.9	17.8	18.4	19.2	6.6	10.1	100.0
1982	27.8	18.0	18.5	19.0	6.4	10.3	100.0
1983	26.7	17.7	18.6	19.8	6.7	10.5	100.0
Production expenses:							
1960							
1960	N/A	N/A	19.9	16.0	18.2	45.9	100.0
1970	12.4	7.6	10.0	20.0	17.6	32.4	100.0
1980	22.6	17.4	18.8	20.8	7.6	12.8	100.0
1982	22.3	17.7	19.1	20.8	7.4	12.7	100.0
1983	22.3	17.5	18.9	20.8	7.5	13.0	100.0
Net farm income:							
1960							
1960	N/A	N/A	6.4	11.2	16.5	65.9	100.0
1970	17.6	8.3	10.3	22.8	21.9	19.1	100.0
1980	53.1	19.8	16.5	11.4	1.8	-2.6	100.0
1982	58.6	19.3	15.3	9.3	.8	-3.3	100.0
1983	48.4	18.5	17.0	14.6	2.9	-1.4	100.0
Off-farm income:							
1960							
1960	N/A	N/A	N/A	2.9	2/	4.5	97.6
1970	N/A	N/A	2.4	3.7	5.8	88.1	100.0
1980	1.5	2.8	4.8	10.2	9.0	71.7	100.0
1982	1.7	3.0	5.2	10.6	8.9	70.6	100.0
1983	1.6	2.9	5.1	10.5	9.0	70.9	100.0

N/A = not available.

1/ For 1960, data are for sales class \$100,000 and over.

2/ For 1960, data are for sales \$40,000 and over.

Table 14--Cash receipts by commodity, 1979-84 1/

Item							Percent change	
	1979	1980	1981	1982	1983	1984	1982-83	1983-84
:								
<u>Billion dollars</u>								
:								
Crop receipts:								
Food grains	9.0	10.4	11.6	11.5	9.7	9.7	-15.1	0.1
Wheat	7.8	8.9	9.9	9.9	8.8	8.4	-11.3	-4.0
Rice	1.2	1.5	1.7	1.7	.9	1.2	-41.8	38.6
Rye 2/	0	0	0	0	0	0	30.3	37.9
:								
Feed grains and hay	14.0	18.3	17.8	17.7	16.2	16.5	-6.0	1.6
Corn	10.3	14.0	13.4	13.3	11.6	11.6	-7.8	-.2
Oats	.3	.3	.4	.4	.3	.3	-8.3	-1.4
Barley	.6	.7	.9	.9	.9	.9	21.1	-2.1
Grain sorghum	1.2	1.4	1.3	1.3	1.5	1.3	-21.9	12.0
Hay (all)	1.7	1.9	1.9	1.9	2.0	2.3	6.6	7.9
:								
Oil crops	14.3	15.5	13.9	13.8	13.5	13.7	-2.2	1.2
Soybeans	12.9	14.2	12.2	12.5	12.1	12.1	-3.0	-.2
Peanuts	.8	.6	1.0	.8	.8	1.1	-3.0	38.3
Other oil crops	.5	.6	.6	.5	.6	.5	20.5	-20.4
:								
Cottonlint and seed	4.3	4.5	4.6	4.9	3.3	3.4	-32.7	1.3
Tobacco	2.3	2.7	3.3	3.3	2.8	2.8	-15.3	-.3
Fruits and nuts	6.5	6.6	6.6	6.8	6.0	6.3	-11.4	4.0
Vegetables	6.5	7.3	8.8	8.1	8.1	8.9	-.1	9.9
Other crops	5.4	6.6	6.5	7.0	7.1	7.9	2.0	10.6
:								
Subtotal, crops	62.3	71.8	72.9	72.7	66.8	69.1	-8.1	3.4
:								
Livestock receipts:								
Red meats	44.6	41.2	39.7	40.9	38.9	40.8	-4.9	4.8
Cattle	32.3	29.3	27.4	27.8	26.7	28.6	-4.2	7.4
Calves	2.8	2.5	2.2	2.0	2.0	2.0	2.5	-3.0
Hogs	9.1	8.9	9.8	10.7	9.8	9.7	-8.2	-1.0
Sheep and lambs	.5	.5	.4	.4	.4	.5	4.2	9.2
:								
Poultry and eggs	8.9	9.1	9.9	9.6	10.0	12.2	4.9	21.6
Broilers	4.0	4.3	4.6	4.5	4.9	6.0	8.8	22.5
Turkeys	1.2	1.3	1.2	1.3	1.3	1.7	1.1	30.4
Eggs	3.3	3.2	3.6	3.4	3.4	4.1	.3	18.5
Other poultry	.4	.3	.4	.4	.4	.5	12.8	9.5
:								
Dairy products	14.6	16.4	18.1	18.2	18.8	17.9	2.9	-4.4
Wholesale milk	14.3	16.1	17.8	17.9	18.5	17.7	3.0	-4.5
Retail milk	.3	.3	.3	.3	.3	.3	-5.3	-2.5
:								
Other livestock	1.1	1.2	1.4	1.6	1.8	1.9	13.3	5.6
:								
Subtotal, livestock	69.2	68.0	69.2	70.3	69.4	72.7	-1.2	4.7
:								
Total receipts	131.5	139.8	142.1	142.9	136.3	141.8	-4.7	4.1

1/ Totals may not add due to rounding.

2/ Less than \$100 million during 1979-82.

Cash receipts for food grains was unchanged at \$9.7 billion. Wheat production increased 7.3 percent to 2.6 billion bushels as acres harvested increased, but lower prices reduced receipts by 4 percent. Rice production increased 37 percent, recovering from the 35-percent drop the year before; receipts surged by 38.6 percent to \$1.2 billion.

Cash receipts for feed grains increased 1.6 percent to \$16.5 billion. Corn receipts fell 0.2 percent, although the average calendar year price of corn rose to \$3.05 per bushel; reduced marketings from low 1983 production reduced bushels sold. Sorghum production increased 77.6 percent as acres harvested increased and average yields improved.

Oil crop cash receipts climbed 1.2 percent to \$13.7 billion after a 2-percent decline in 1983. Cash receipts for soybeans declined less than 1 percent to \$12.1 billion, while peanut receipts grew 38 percent to \$1.1 billion. A combination of higher average prices and quantity marketed helped keep soybean receipts near 1983 levels and boosted peanut receipts.

Cotton receipts rose slightly because of strong marketings during the second half of the year. Increased harvested acreage and a 20-percent rise in average yield boosted cotton production 71 percent.

Tobacco marketings increased, but tobacco prices fell. Production rose 22 percent because of higher average yields and a slight increase in area harvested.

Vegetable cash receipts rose 9.9 percent to \$8.9 billion, mostly because potato receipts climbed 33 percent which accounted for \$2 billion (23 percent) of total vegetable receipts for 1984. An 8.3-percent production increase and higher potato prices boosted earnings. Prices received for all commercial vegetables (excluding potatoes, sweetpotatoes, and dry beans) rose 2.6 percent in 1984, and production increased about 1.7 percent.

Cash receipts for fruits and nuts increased 4 percent to \$6.3 billion despite significantly lower marketings spurred by reduced production levels. But, fruit farmers benefited from a 57.9-percent increase in prices received. Orange receipts increased 35 percent to \$1.7 billion in 1984, and apples and walnuts rose 13.7 percent and 82.2 percent, respectively.

Marketing Distributions

Skillful farming alone no longer guarantees success for farmers. Sales acumen has enhanced the selling of crops and livestock products. The marketing distributions of the major field crops since 1965 have revealed that farmers are restructuring the marketing of their crops.

During the late 1960's, distribution of corn marketings was split nearly evenly between the calendar year of harvest (48 percent of the sales) and the following calendar year. For crop years 1979 to 1983, 35 percent of sales occurred during the harvest calendar year and 65 percent the following calendar year (table 15). In recent years, farmers have marketed all the major field crops this way, mainly because of increased storage capacity, more sophisticated pricing and marketing technology, farm programs with relatively attractive loan rates including the farmer-owned reserve, and increased price variability during the marketing season which created closer ties to fluctuating world markets. The variability in year-to-year marketing distributions will likely increase as more farmers take

Table 15--U.S. marketing distributions for selected crops,
1979-83

Commodity	Crop year	Percentage of crop marketed in:		
		Calendar year	Following	calendar year
		produced	calendar year	
			<u>Percent</u>	
Wheat	1979/80	71.4	28.6	
	1980/81	73.1	26.9	
	1981/82	70.1	29.9	
	1982/83	68.9	31.1	
	1983/84	68.9	31.1	
Corn	1979/80	33.0	67.0	
	1980/81	38.0	62.0	
	1981/82	35.5	64.5	
	1982/83	34.5	65.5	
	1983/84	35.2	64.8	
Sorghum	1979/80	59.8	40.2	
	1980/81	69.0	31.0	
	1981/82	60.5	39.5	
	1982/83	63.9	36.1	
	1983/84	60.5	39.5	
Barley	1979/80	62.5	37.5	
	1980/81	66.0	34.0	
	1981/82	61.9	38.1	
	1982/83	56.5	43.5	
	1983/84	65.7	33.5	
Soybeans	1979/80	45.4	54.6	
	1980/81	51.9	48.1	
	1981/82	47.2	52.8	
	1982/83	-5.8	54.2	
	1983/84	47.7	52.3	
Cotton	1979/80	63.6	36.4	
	1980/81	60.5	39.5	
	1981/82	56.9	43.1	
	1982/83	57.1	42.9	
	1983/84	68.5	31.5	
Hay	1979/80	71.0	29.0	
	1980/81	72.4	27.6	
	1981/82	71.0	29.0	
	1982/83	67.3	32.7	
	1983/84	65.8	34.2	

Source: Crop Production, USDA, SRS.

advantage of new market information technology, microcomputers, and marketing schemes such as forward contracting and hedging.

Direct Government Payments

Direct Government payments once again contributed significantly to gross farm income (table 16). As in 1983, direct payments consisted of both cash payments and commodity disbursements under the 1983 and 1984 PIK program (wheat only). Cash payments for deficiency, diversion, storage, and conservation programs totaled \$3.97 billion in 1984 compared with \$4.05 billion in 1983. The \$4.5 billion in PIK disbursements (valued at the loan rate for the individual crop loan) and the 1984 cash payments totaled \$8.4 billion in direct payments, \$900 million less than the 1983 record (fig. 8). The higher levels of Government payments since 1981 included a change in program structure, from emphasis on CCC loans in 1981-82 to emphasis on PIK and direct payments in 1983-84.

Wheat producers received 45 percent of cash payments (\$1.8 billion) in 1984 made up of \$1.2 billion in deficiency payments and \$592 million in voluntary wheat land diversion payments. Continued low market prices for wheat (because of a combination of large supplies and weak demand, particularly for exports) triggered a deficiency payment rate of 97 cents per bushel (\$3.41 market price for the first 5 months of the crop year subtracted from the target level of \$4.38 per bushel).

Feed grain producers received \$367 million, 80 percent of which consisted of deficiency payments. These deficiency payments were mostly advances on projected 1984 and 1985 crop deficiency payments which normally would have been paid out in April 1985 and April 1986, respectively. Cotton producers received \$275 million in 1984, mostly advanced 1984 crop and 1985 deficiency payments.

The Government paid milk producers \$536 million in milk diversion payments under a program authorized by the Dairy and Tobacco Adjustment Act of 1983. This program, which ended on March 31, 1985, paid \$10 per cwt to dairy farmers signing contracts with USDA for reducing their marketings from 5 to 30 percent of their established historical base. The funds for these diversion payments came from 50-cent deductions levied on every hundredweight of milk marketed by dairy farmers to wholesale processing plants.^{3/}

Farmer-owned reserve storage payments, mostly for corn, sorghum, and wheat farmers, totaled \$333 million, 8 percent of total cash payments. Payment of storage for PIK commodities amounted to \$88 million.

Wool producers received \$118 million under the National Wool Act in 1984 as the payment for 1983 wool production increased by \$34 million from the year before. The associated payment rate that brought the average price received by all wool producers to the \$1.53 support price was calculated at 149.6 percent. This rate, multiplied by the net dollar return from wool sales, determined the producers' incentive payment.

3/ For more information on the dairy diversion program, see U.S. Department of Agriculture, Economic Research Service, Dairy Outlook and Situation, Mar. 1984, pp. 22-24.

Table 16--Selected recoverable and nonrecoverable Government outlays to the farm sector, calendar years 1979-84 1/

Item	1979	1980	1981	1982	1983	1984
<u>Million dollars</u>						
Nonrecoverable (direct Government payments):						
Deficiency payments:						
Wheat	36.4	0.4	393.2	633.0	617.7	1,202.4
Rice	57.9	.1	*	155.8	259.9	170.8
Feed grains	289.5	64.5	45.4	528.7	460.9	296.2
Upland cotton	0	0	0	683.3	588.2	249.6
Subtotal	383.8	65.0	438.6	2,000.8	1,926.7	1,919.0
Diversion payments:						
Wheat	0	0	0	0	245.3	592.4
Rice	0	0	0	0	17.7	21.0
Feed grains	146.3	2.6	0.1	137.3	883.0	70.5
Upland cotton	3.6	.1	*	1.7	2.0	24.4
Milk (financed through producer contributions):	0	0	0	0	0	536.1
Subtotal	149.9	2.7	.1	139.0	1,148.0	1,244.4
Disaster payments:						
Wheat	77.6	210.9	231.3	19.2	1.1	.3
Rice	.8	1.8	1.7	.1	*	0
Feed grain	58.1	315.0	197.5	47.3	2.2	*
Cotton	181.4	171.6	222.0	115.3	72.0	.7
Subtotal	317.9	699.3	652.5	181.9	75.3	1.0
Reserve storage payments:						
Wheat	59.1	24.0	125.7	273.7	266.3	202.1
Corn	137.4	120.3	107.1	521.6	174.4	60.2
Sorghum grain	12.4	3.2	32.9	93.2	45.0	44.0
Barley	5.5	-.6	2.8	18.5	21.0	26.7
Oats	5.9	-.1	-.1	.8	.5	*
Unallocated 2/	5.6	13.6	41.1	0	48.0	87.6
Subtotal	225.9	160.4	309.5	907.38	555.2	420.6
Other programs 3/						
Total	1,416.3	1,285.7	1,932.1	3,492.0	4,052.7	3,970.9
Value of PIK commodities 4/						
	N/A	N/A	N/A	N/A	5,241.5	4,474.1
Recoverable:						
Net CCC loan values: 5/ ,6/						
Wheat	-489.2	103.5	1,042.0	1,976.9	1,003.5	74.2
Rice, rye	18.2	-2.9	-6.9	439.4	-14.1	192.5
Corn	-419.4	478.3	149.5	3,758.4	-211.5	-1,087.5
Sorghum, barley, oats	-160.0	-191.1	243.4	770.2	93.9	-19.9
Soybeans	130.8	32.2	448.5	1,060.9	-1,331.6	492.4
All cotton	34.8	30.8	157.7	1,075.8	-288.8	-467.5
Total	-884.8	450.8	2,034.2	9,081.6	-748.6	-815.8
CCC dairy purchase costs 7/						
	1,008.0	1,519.1	2,182.0	2,562.3	2,611.4	1,521.3
Total 8/	1,539.4	3,255.6	6,148.3	15,135.9	11,157.0	9,150.5

*Less than \$100,000.

N/A = not applicable.

1/ These are approximations and are not official CCC budget outlays.

2/ Includes PIK storage costs for 1983 and 1984.

3/ Includes wool price supports, various agricultural conservation programs, and other miscellaneous.

4/ PIK quantities valued at original loan rates. This stock variable is considered a flow for this analysis.

5/ Includes regular and reserve nonrecourse loans.

6/ Negatives denote net withdrawals from CCC.

7/ Estimated calendar year data and excludes proceeds from CCC sales and transfers.

8/ Excludes any other non-CCC aid.

As in 1983, Texas farmers got the largest share of all Government cash payments in 1984, at \$416 million, about 11 percent of the total. Texas cotton growers accounted for \$132 million, more than other farmers in the State and more than any other State's cotton farmers. Texas wheat farmers received \$122 million, 29 percent of the State's cash payments. Texas wool producers garnered another \$30 million, which led the Nation.

Kansas, the leading wheat-producing State, received the second largest cash payment total, \$385 million, nearly 10 percent of the U.S. total. Wheat deficiency and diversion payments totaled \$305 million of all cash payments to the State.

Kansas farmers got 17 percent of wheat cash payments, tops in the Nation. Rounding out the five leading recipients of cash Government payments were North Dakota (\$368 million), Minnesota (\$215 million), and Oklahoma (\$213 million).

Program Participation

Participation levels in the 1984 commodity programs were considerably lower than in 1983, primarily because program provisions were not as economically attractive (table 17). Only the wheat program included paid land diversion and PIK provisions. However, participation in the wheat program also decreased from 1983 levels when only 31 percent of farms with wheat bases participated compared with 61 percent in 1983. The farmers' reluctance to participate may be attributable to the reduction in the base percentage that could be set aside under the PIK

**Figure 8--Selected calendar year Government outlays to the farm sector
1978-84**

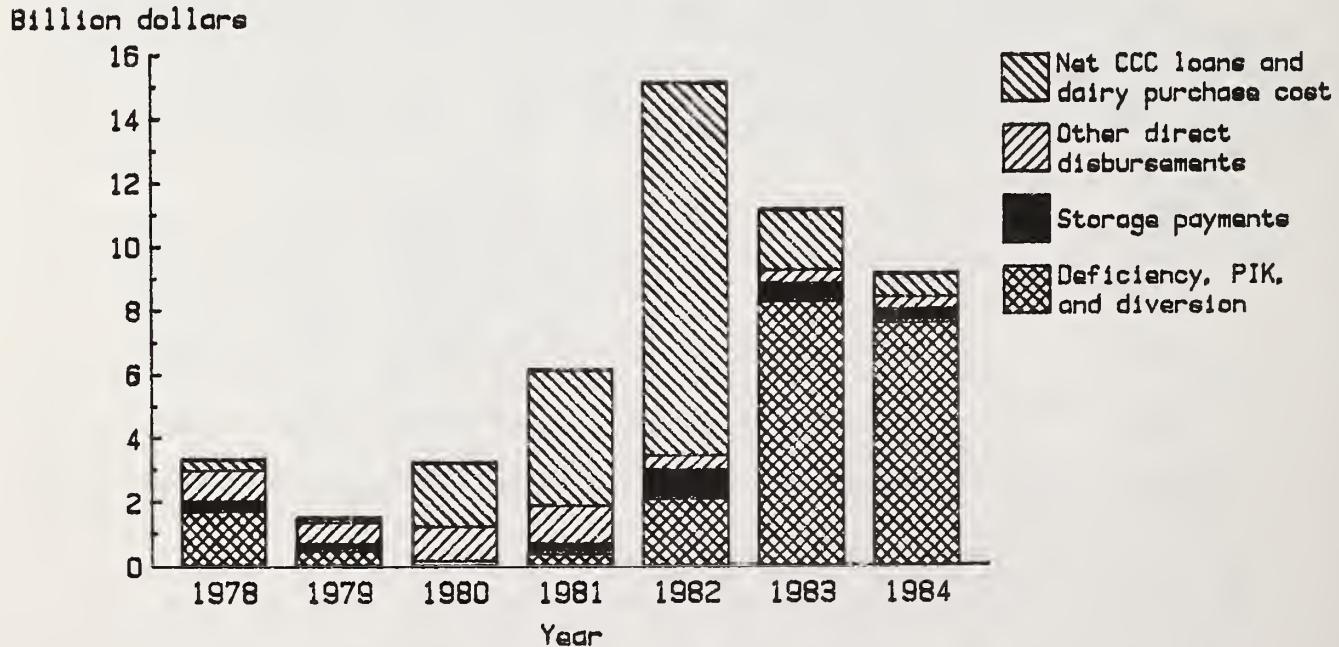


Table 17-Participation in the wheat, feed grains, cotton, and rice programs, 1983-84

Commodity	Number of farms :		Base acreages		On en-rolled:		Conservation use acreage (CUA) 1/	
	Total	Enrollment	Total	Percent	Total	Percent	total	CUA of enrolled base
Wheat	937	575	61	90,949	78,388	86	32,358	35
Corn and sorghum	1,501	855	57	101,220	78,908	78	39,760	39
Barley and oats	429	123	29	19,610	11,665	59	2,330	12
Cotton	138	117	85	15,431	14,600	95	6,838	44
Rice	22	20	90	4,002	3,903	98	1,763	44
Total	N/A	N/A	N/A	231,212	187,464	81	82,949	36
1983:								
Wheat	1,033	322	31	93,876	57,040	61	20,758	22
Corn and sorghum	1,640	464	28	99,788	52,655	53	5,266	5
Barley and oats	600	61	10	21,560	6,867	32	687	3
Cotton	141	76	54	15,655	11,173	71	2,788	18
Rice	24	17	71	4,163	3,641	87	910	22
Total	N/A	N/A	N/A	235,042	131,376	56	30,409	13
1984:								
Wheat	1,033	322	31	93,876	57,040	61	20,758	22
Corn and sorghum	1,640	464	28	99,788	52,655	53	5,266	5
Barley and oats	600	61	10	21,560	6,867	32	687	3
Cotton	141	76	54	15,655	11,173	71	2,788	18
Rice	24	17	71	4,163	3,641	87	910	22
Total	N/A	N/A	N/A	235,042	131,376	56	30,409	13

N/A = not applicable; an individual farm can have more than one base.
1/ Acreage idled because of participation in commodity programs.

Source: Agricultural Stabilization and Conservation Service, USDA.

provision (from 10 to 30 percent in 1983 to 10 to 20 percent) and in the decline of in-kind payment levels (from 95 percent of normal yield in 1983 to 75 percent).

Farmers who participated in the 1984 programs enrolled 131 million acres, accounting for 56 percent of the total commodity acreage base (used in Government programs to calculate crops qualifying for price supports), a significant decline from the 187 million acres in 1983. Farmers took 30 million acres out of production compared with 83 million acres in 1983. Thirteen percent of the total base acreage in 1984 was enrolled in conservation use acreage compared with 36 percent of the total base in 1983. The highest percentage of acreage idled was 22 percent each for wheat and rice.

Off-farm income

Off-farm income increased to an estimated \$40 billion (table 18). Wages and salaries from nonfarm sources, the principal component of off-farm income, declined by about \$300 million to \$21.2 billion. An increase of more than \$1.2 billion in nonfarm business and professional income led to the overall increase in total off-farm income.

Wages and salaries from farm services fell to \$337 million, less than one-third the 1979 level of \$1.1 billion. This declining trend, which began in 1980, reflected the 1980-84 economic difficulties of the agricultural sector. As farm income fell, farmers appeared to have reduced this type of labor cost.

Table 18--Off-farm income, 1978-83 1/

Item	: 1978	: 1979	: 1980	: 1981	: 1982	: 1983	: 1984
:							
<u>Billion dollars</u>							
Wages and salaries from nonfarm sources	: 19.3	21.9	22.0	22.0	21.8	21.5	21.2
:							
Nonfarm business and professional income	: 2.7	3.0	4.4	5.8	7.1	8.3	9.5
:							
Pensions, retirement, welfare (transfer payments), interest, dividends, other non- farm income	: 6.7	7.8	8.1	8.4	8.6	8.8	8.9
:							
Wages and salaries from farm sources	: 1.0	1.1	1.0	.8	.7	.5	.3
:							
Total off-farm income	: 29.7	33.8	35.4	37.0	38.1	39.1	40.0
:							
<u>Millions</u>							
Number of farms	: 2.44	2.43	2.43	2.43	2.40	2.37	2.33
:							
<u>Dollars</u>							
Average off-farm income per farm	: 12,194	13,913	14,561	15,209	15,857	16,506	17,154

1/ Estimates are based on the Farm Finance Survey and the Farm Costs and Returns Survey for 1979 and 1984, respectively. For years other than survey years, estimates are made by adjusting the survey data by the annual changes in the Bureau of Economic Analysis estimate of personal income for the United States.

Total off-farm income increased by smaller estimated annual increments in every year since 1979 except 1981 and 1983 (table 21). Since 1979, these annual increases had reached at least \$1 billion until 1984's \$900 million. The leveling off of this income component was especially critical because the rate of inflation had outpaced growth in off-farm income since 1981. Thus, as farm income has declined, off-farm income has not sustained increases to maintain total sector income in constant dollars. However, because of continuing declines in the numbers of farms (down more than 100,000 farms to 2.33 million between 1978 and 1984), the average per farm income from off-farm sources has increased by \$600 to \$800, annually. While off-farm income is substantial for farms in every size category, off-farm earnings dominate the income of small, part-time farmers (table 13).

Production Expenses

Total farm expenditures edged up 2.9 percent to \$139.5 billion, following a slight decline in 1983 (table 19). This increase reflected a general rise in prices paid by farmers for inputs and increased quantities purchased. Total farm production expenses in 1983 fell 0.9 percent when the PIK program and severe drought led to a slight reduction in total farm input use. All major expense categories showed an increase in 1984 except for interest expenses which declined 1.4 percent from 1983. Although expenses rose in 1984, the increase in cash receipts plus Government payments raised net farm income in both current and deflated dollars (fig. 9).

Outlays for farm-origin inputs (feed, purchased livestock, and seed) rose 1 percent to \$33.4 billion, about 24 percent of total farm expenses (fig. 10). Feed expenses totaled \$20.4 billion, down approximately 4 percent. The drop in feed used offset a slight rise in feed prices. Feeder and replacement livestock spending rose about 7 percent to \$9.5 billion because of the increase in the number of animals purchased; feeder livestock prices fell 3.5 percent. Seed expenditures climbed 18.8 percent to \$3.5 billion as a result of increased demand and higher prices. Seed use increased 11.8 percent because planted acreage rebounded from the PIK-induced drop in 1983 which had cut into seed use by 5.8 percent.

Expenses for manufactured inputs (fertilizer, fuel, electricity, and pesticides) rose to \$23.1 billion, with fuel expenses showing the only decline from 1983. This 8.4-percent increase was the largest of any major input expense category. Fertilizer and pesticide expenses registered increases of 16.4 and 18.8 percent, respectively, again reflecting the rise in planted acres over 1983 and the increase in prices for both inputs. Electricity expenses rose about 1 percent, and fuel and oil expenses fell 3.7 percent, the third consecutive year in which fuel expenses have declined, providing an estimated \$1.45 billion in expense savings between 1981 and 1984.

Total interest charges declined for the second straight year to \$21.1 billion, a 1.4-percent drop from 1983. Real estate interest outlays fell about 1 percent while nonreal estate interest expenses declined about 2 percent from 1983 despite slightly higher short-term interest rates. The consecutive-year decline in nonreal estate debt interest was the first since 1954. Average outstanding real estate debt dropped slightly in 1984, leading to the fall in real estate interest expenses while long-term interest rates leveled off.

Table 19--Farm production expenses, 1979-84 1/

Items							Percent change	
	1979	1980	1981	1982	1983	1984	1982-83:1983-84	
:								
: ----- <u>Million dollars</u> -----								
Feed	19,314	20,971	20,855	18,592	21,261	20,412	14.4	-4.0
Livestock	13,012	10,670	8,999	9,696	8,814	9,469	-9.1	7.4
Seed	2,904	3,220	3,428	3,172	2,987	3,548	-5.8	18.8
Farm-origin inputs	35,230	34,861	33,282	31,460	33,062	33,429	5.1	1.1
:								
Fertilizer	7,369	9,490	9,409	8,046	7,646	8,896	-5.0	16.3
Fuels and oils	5,635	7,879	8,570	7,794	7,388	7,118	-5.2	-3.7
Electricity	1,447	1,526	1,747	2,041	2,146	2,167	5.1	1.0
Pesticides	3,436	3,539	4,201	4,282	4,161	4,943	-2.8	18.8
Manufactured inputs	17,887	22,434	23,927	22,163	21,341	23,124	-3.7	8.4
:								
Short-term interest	6,868	8,717	10,722	11,349	10,615	10,396	-6.5	-2.1
Real estate interest	6,190	7,544	9,142	10,481	10,815	10,733	3.2	-.8
Total interest	13,058	16,261	19,864	21,830	21,430	21,129	-1.8	-1.4
:								
Repair and operation	7,280	7,648	7,587	7,730	7,543	7,860	-2.4	4.2
Hired labor	8,981	9,293	8,931	10,183	9,788	10,070	-3.9	2.9
Machine hire and and customwork	2,063	1,823	1,984	2,025	1,523	1,951	-24.8	28.1
Dairy deductions	0	0	0	0	633	656		
Other operating expenses	6,411	6,712	7,655	8,226	8,484	9,092	3.1	7.2
Total operating expenses	24,735	25,477	26,158	28,164	27,971	29,629	-.7	5.9
:								
Depreciation	19,345	21,474	23,573	23,886	23,490	23,020	-1.7	-2.0
Taxes	3,871	3,891	4,246	4,394	4,323	4,407	-1.6	1.9
Net rent 2/	4,831	4,989	5,074	5,020	4,010	4,757	-20.1	18.6
Total overhead expenses	28,047	30,354	32,893	33,300	31,823	32,184	-4.4	1.1
:								
Total production expenses	118,957	129,389	136,125	136,917	135,626	139,496	-.9	2.9

1/ Totals may not add due to rounding.

2/ Nonoperating landlords.

Figure 9--Gross and net farm income
1970-84

Billion dollars

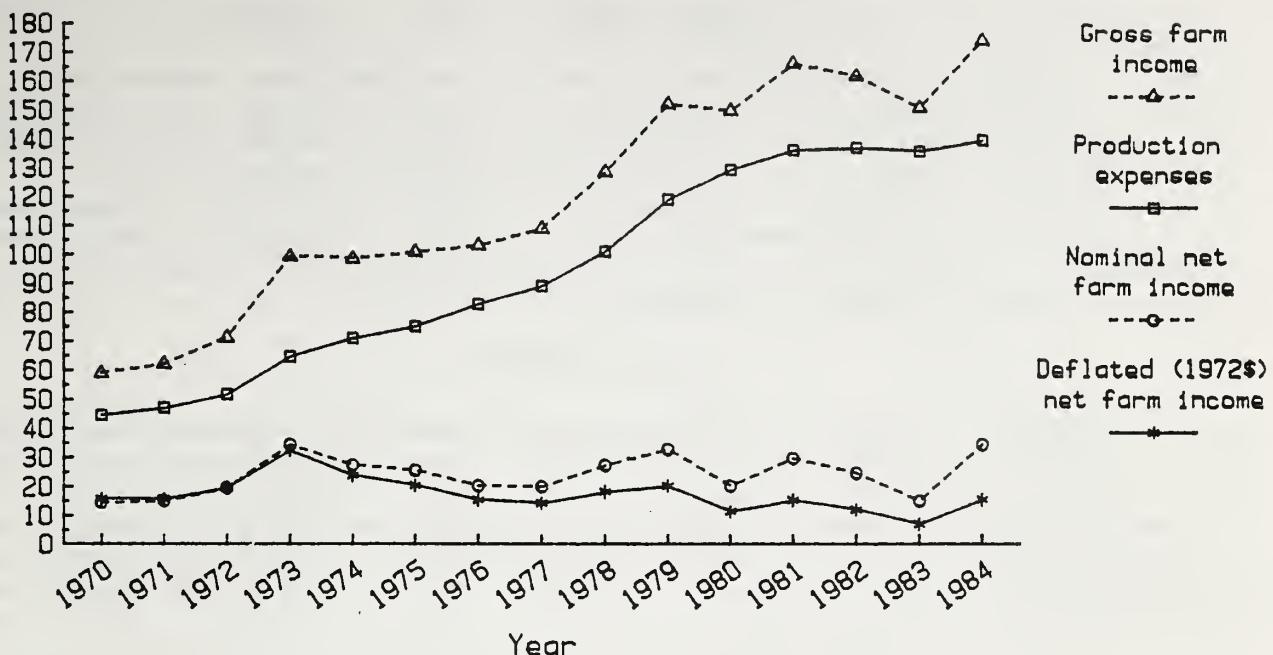
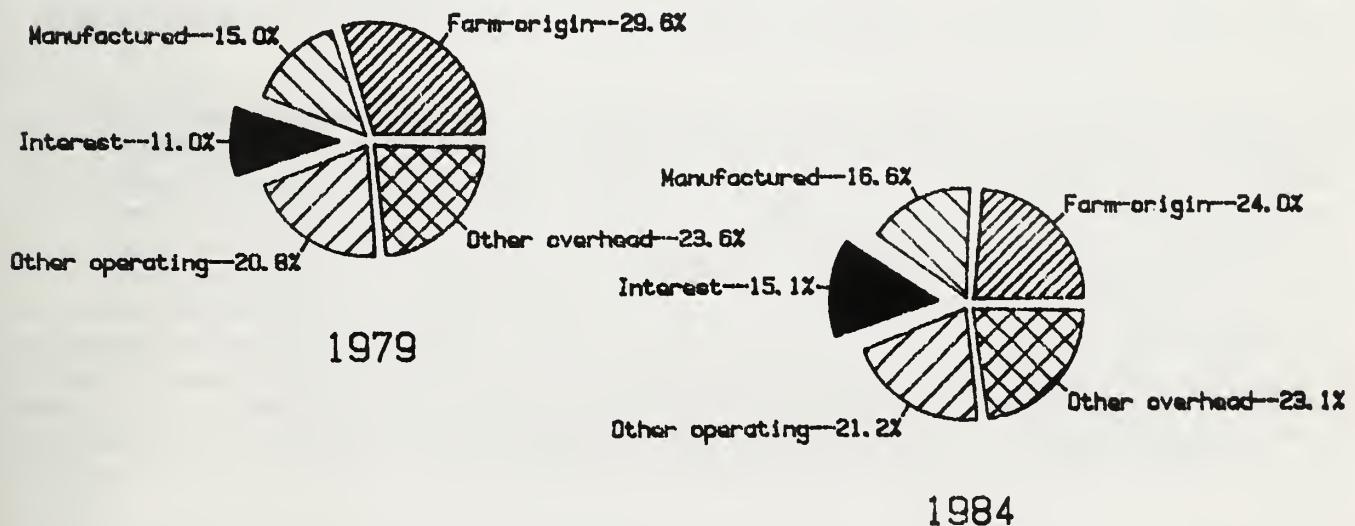


Figure 10--Farm production expenses
1979 and 1984



Outlays for all other operating expenses increased about 5.9 percent as machine hire and customwork climbed most, by 28.1 percent to \$1.9 billion, still below the record level in 1979. Hired labor and repair outlays grew 2.9 and 4.2 percent, respectively.

Farm capital expenditures continued to fall in 1984, leaving depreciation expenses 2 percent below 1983. Depreciation, calculated as the capital replacement value, has risen consistently over the years, as machinery was substituted for labor. In the past few years, the financial stress in the farm sector has led many farmers to forego or postpone purchases of new farm machinery and equipment and to extend the life of their current equipment through added repairs. Frequently, rather than buying new equipment, farmers have chosen used equipment whose availability has increased because of farm financial difficulties. Taxes increased by 1.9 percent. Net rent to nonoperating landlords increased by 18.6 percent over the PIK-reduced 1983 level to \$4.8 billion.

Income Variability

The coefficient of variation (C.V.) is a relative measure of variability of one set of data compared with another set. We calculate the coefficient of variation by expressing the standard deviation of a data set as a percentage of its arithmetic mean. The standard deviation, an absolute measure of dispersion, is sometimes inappropriate for relative comparisons outside a single data set because of dependency on units or orders of magnitude. The C.V., as a percentage, frees the analyst from these problems.

Both net farm income and net cash income have varied considerably over time (table 23). However, net farm income, a measure of a given year's production-generated income, has tended to vary more than net cash income because output depends on the vagaries of weather and farm programs. Net cash income reacts more to market prices and excludes the variability resulting from the inventory component of net farm income. In years of production shifts, farmers can draw on inventory or use CCC loans to smooth out cash income flows (this behavior lowers the variability of cash income and increases the variability of net farm income). Despite the fact that the two income statistics measured different concepts, their C.V.'s were fairly close for the period 1960 to 1984 (table 20). Both income series experienced considerable variations with C.V.'s of 25 and 31 percent, respectively, for net cash and net farm incomes.

The 1970's brought turbulence to the farm sector's income as years of fairly steady income gave way to sharp upward and downward movements. This increased variation, caused in large part by the explosive growth in U.S. agricultural exports, is reflected in the dispersion statistics (table 20). Net farm income, in particular, showed variations exceeding those of the 1940's as alternating years of drought and record-breaking production levels sent real per farm net income soaring to a record high \$11,535 in 1973 and dropping to a drought- and PIK-influenced \$3,135 in 1983, the lowest since 1940. Net cash income during the 1970's also varied more than in the previous two decades, but farmers stabilized income flow between years of fluctuating production by using or adding to inventories, especially during 1980-84 when the C.V. for net cash income was 6 percent, but the C.V. for net farm income was 29 percent.

Table 20--Relative dispersion of real per farm net cash and net farm income 1/

Item	: Observations	: Mean	: Variance	: Standard deviation	: Coefficient of variation
	: Number	1972 dollars			Percent
Net cash income:	:				
1940 to 1949	:	10	4,057	1,188,582	1,090 26.87
1950 to 1959	:	10	4,371	64,446	254 5.81
1960 to 1969	:	10	5,679	559,373	748 13.17
1970 to 1979	:	10	8,821	2,766,330	1,663 18.87
1980 to 1984	:	5	7,770	214,589	463 5.96
	:				
1960 to 1984	:	25	7,350	3,374,124	1,837 24.99
	:				
Net farm income:	:				
1940 to 1949	:	10	4,718	1,182,808	1,088 23.05
1950 to 1959	:	10	4,383	207,251	455 10.39
1960 to 1969	:	10	4,809	247,557	498 10.35
1970 to 1979	:	10	7,291	3,522,598	1,877 25.74
1980 to 1984	:	5	5,091	2,154,740	1,468 28.83
	:				
1960 to 1984	:	25	5,858	3,209,994	1,792 30.58

1/ Deflated by the GNP implicit price deflator, 1972=100.

Finance

This section reviews finance issues relating to balance sheet, interest expense, and capital flows in the farm sector during 1984. Aggregate balance sheet and interest expense issues are, perhaps, the two most closely monitored sets of financial indicators.

The Farm Sector Balance Sheet

The farm sector balance sheet estimates the current market value of total assets, debt (liabilities), and net worth (assets minus liabilities) as of the last day of a calendar year (table 21). The farm sector may be viewed either as a business, excluding assets and liabilities of farm households, or as a firm/household, including both farming and personal activities of farm households. The financial accounts of the balance sheet separate measurement of the economic well-being of the farm sector (part of the business sector of national income accounts) from the well-being of farm operator families (a part of the household sector). This separation permits clearer distinction between the economic status of the farm production establishment versus that of operator households. Because the balance sheet of the aggregate U.S. farm sector obscures variations in well-being within the sector, the accounts are available in disaggregated form by sales class and by State.^{4/}

4/ See U.S. Department of Agriculture, Economic Research Service, Economic Indicators of the Farm Sector: National Financial Summary, and Economic Indicators of the Farm Sector: State Financial Summary.

Table 21--Balance sheet of the farming sector (including operator households),
Dec. 31, 1980-84 1/

Item	1980	1981	1982	1983	1984	Percent change, 1983-84
<u>Billion dollars</u>						
Physical assets:						
Real estate	846.6	846.7	808.7	798.0	693.7	-13.07
Nonreal estate						
Livestock and poultry	60.6	53.5	53.0	49.7	49.6	-.2
Machinery and motor vehicles	102.5	108.8	108.8	105.8	99.4	-6.0
Crops stored on and off farms	36.5	36.1	40.6	33.2	33.7	1.5
Financial assets:						
Demand deposits and currency	16.2	16.7	17.4	18.2	19.8	8.8
Investments in cooperatives	22.8	24.8	27.2	28.5	29.8	4.6
Total assets	1,108.3	1,111.1	1,082.0	1,061.4	955.8	-9.9
Liabilities:						
Real estate debt	95.8	105.8	110.0	112.6	111.6	-.9
Nonreal estate debt						
Excluding CCC loans	81.6	88.3	91.8	92.8	92.2	-.6
CCC loans	5.0	8.0	15.4	10.8	8.7	-19.4
Total liabilities	182.3	202.1	217.2	216.2	212.5	-1.7
Proprietors' equity	926.0	909.0	864.8	845.1	743.3	-12.0
Total claims	1,108.3	1,111.1	1,082.0	1,061.4	955.8	-9.9
Debt-to-asset ratio	16.5	18.2	20.1	20.4	22.2	8.8

1/ Preliminary.

The following characteristics define debt, assets, equity, and debt burden, according to USDA.

Debt

- Growth in farm debt has declined sharply in recent years. Total debt is estimated to have dropped for the second consecutive year to \$212 billion as of December 31, 1984.

- o Farm debt grew at a compound annual rate of 13 percent from 1970 to 1980 but has since declined to 4 percent per annum since 1980.
- o Financially stressed farmers have begun to restructure their balance sheets in efforts to restore profitability and cash flow.

Assets

- o Total farm and farm household assets were worth \$956 billion on December 31, 1984. The value of farm assets grew at a compound annual rate of 12 percent from 1970 to 1981. Since then, the value of farm assets has dropped every year.
- o Trends in total asset values are determined largely by changes in the value of farm real estate because farm real estate makes up about 75 percent of the total value of farm assets.
- o The value of farm real estate peaked in 1981, at \$847 billion, but fell at a rate of 6 percent annually to \$694 billion as of December 31, 1984.

Equity

- o Farm sector equity grew rapidly during the 1970's (12 percent compound annual rate). This equity growth provided the collateral base for a much higher level of debt use.
- o Peaking in 1980 at \$926 billion, farm equity has declined each year since then at an average rate of 5 percent and probably will continue to do so until farmland values stabilize.
- o The decline in equity and the uncertainty about the future has reduced the borrowing capacity of many farmers, an important source of liquidity for farmers who rely on credit to finance production and to help absorb large losses.

Debt burden

- o The ratio of debt to assets tended to stabilize during the 1970's, at about 15 to 16 percent, despite the rapid growth in farm debt. The typical fluctuation was less than one-half a percentage point. However, during 1980-84, the debt-to-asset ratio has increased from 17 to 22 percent, mainly because of declines in farm real estate values.
- o In a sense, the strong land market during the 1970's masked the growing debt burden (as defined by the debt-to-asset ratio) during that period.

The declines in real estate values and farm incomes may have affected the valuation of other farm assets. Since 1980, livestock and poultry inventories have fallen 18 percent. Since 1982, machinery and motor vehicles inventories fell 9 percent. The value of crop inventories declined by 17 since 1982, reflecting commodity price and inventory quantity changes. Financial assets increased slightly in 1984.

While total liabilities fell an estimated 2 percent in 1984, the value of farm sector assets dropped 10 percent, producing a 12-percent fall in proprietors' equity (fig. 11). Continued declines in asset values and equity will likely aggravate financial stress.

Interest Expenses

Farmers paid out \$300 million less of interest expense in 1984 (table 22). Total interest paid of nearly \$21 billion accounted for 15 percent of total 1984 production costs, ranking second to depreciation (16 percent). Crop farmers spent 16 percent of production costs on interest, and livestock farmers spent 14 percent.

Interest paid on farm real estate-secured debt did not decrease in 1984 as much as nonreal estate interest paid. Although interest rates have declined, the refinancing of existing real estate debt was probably at higher interest rates than the historical average. This effect puts an upward pressure on average interest expenses on real estate-secured debt and somewhat softens the benefits of declining interest rates. For example, the average interest rate on nonreal estate-secured debt dropped from 11.1 percent in 1981 to 10.3 percent in 1984. However, the average interest rate on real estate-secured debt increased during that period from 8.6 to 9.6 percent (table 22).

Figure 11--Balance sheet of the farming sector including dwellings, Dec 31 1970-84

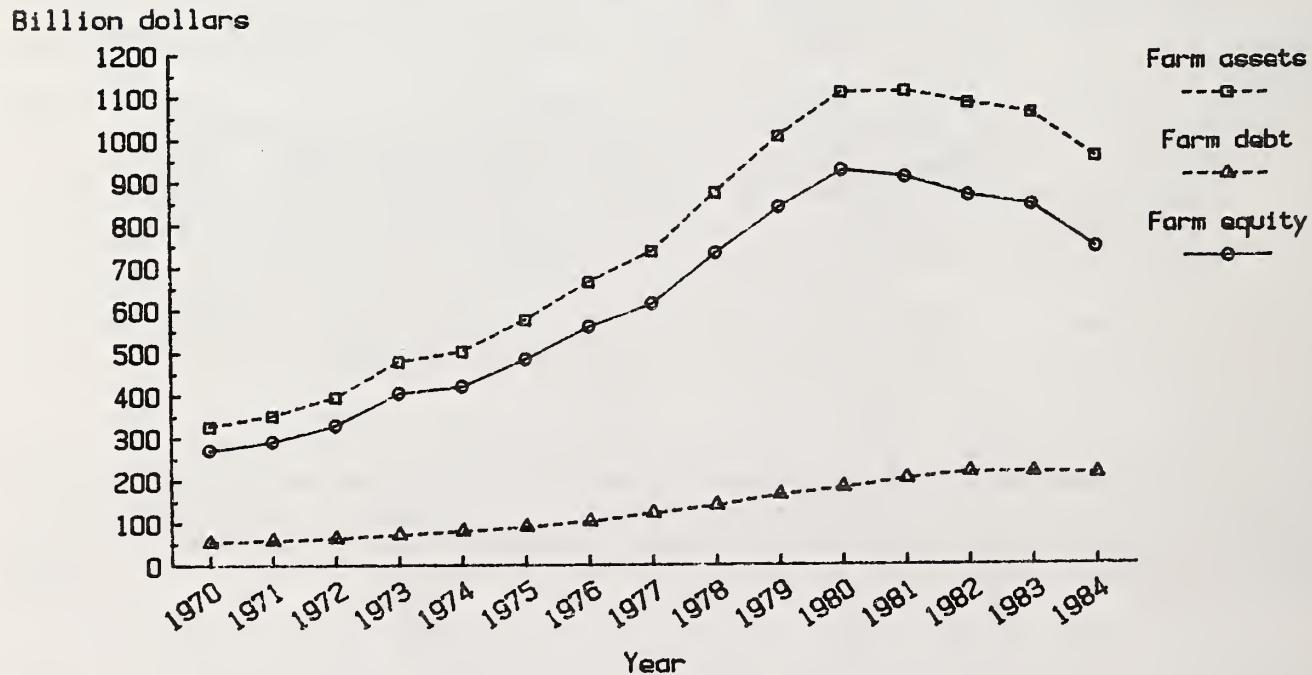


Table 22--Farm interest expenses, 1978-84

Item	: 1978	: 1979	: 1980	: 1981	: 1982	: 1983	: 1984
	:						
						<u>Percent</u>	
Selected interest rates	:						
(average on new farm loans):							
Real estate loans:	:						
Federal land banks	:	8.36	9.16	10.39	11.27	12.27	11.63
Life insurance companies	:	9.58	10.52	13.21	15.42	15.51	12.47
Farmers Home Admin.	:	6.42	9.05	11.05	13.00	12.94	10.79
Nonreal estate loans	:						
Rural banks, farm production loans	:	9.33	10.80	14.82	17.87	17.08	14.30
Production Credit Assoc.	:	8.74	10.56	12.74	14.46	14.58	11.95
Farmers Home Admin.	:	8.20	9.43	11.00	14.04	13.73	10.31
	:						
Prime rate, large banks	:	8.63	9.25	15.06	19.63	15.56	10.88
	:						
						<u>Billion dollars</u>	
Average debt outstanding: 1/	:						
Real estate 2/	:	71.61	85.60	95.76	105.80	110.03	112.62
Nonreal estate 2/ , 3/	:	69.40	80.48	86.56	96.31	107.21	103.62
Total	:	141.01	166.08	182.32	202.11	217.24	216.24
	:						
Interest expenses: 4/	:						
Real estate 2/	:	5.06	6.19	7.54	9.14	10.48	10.82
Nonreal estate 2/ , 3/	:	5.17	6.87	8.72	10.72	11.35	10.62
Total	:	10.23	13.06	16.26	19.86	21.83	21.43
	:						
						<u>Percent</u>	
Average on outstanding farm debt: 5/	:						
Real estate 2/ , 6/	:	7.07	7.23	7.88	8.64	9.53	9.61
Nonreal estate 2/ , 3/	:	7.45	8.54	10.07	11.13	10.59	10.25
Total	:	7.25	7.86	8.92	9.83	10.05	9.91
	:						
Percentage change in:	:						
Average interest rate on outstanding farm debt	:	9.8	8.6	13.6	10.1	2.3	-1.4
Debt outstanding	:	14.8	17.8	9.8	10.9	7.5	-5
Interest paid	:	19.8	27.7	24.5	22.1	9.9	-1.8
							-1.4

1/ Average of debt outstanding at beginning and end of each year.

2/ Includes farm household debt.

3/ Includes CCC debt.

4/ Interest expenses are flows measured at the end of each year.

5/ "Average on outstanding farm debt" is estimated as interest expenses as a percentage of debt outstanding.

6/ This weights each component by the loan volume held by each lender.

The declines in farm debt and farm interest expense in 1983-84 are a sign of financial management improvement in the sector (figs. 11 and 12). Annual declines of \$3 billion or less in debt, when compared to an annual growth of \$19 billion per year during 1978-82 (table 1), help explain the relatively larger difficulty of lowering the debt burden compared with increasing it.

Sector Debt Distribution

The major trends for sector debt distribution were as follows (table 23):

- o A large increase in sector debt of 137 percent, from \$91.6 to \$217.2 billion, during 1975-82, followed by 2 years of moderate declines.
- o The tripling of Federal land bank debt and a fivefold increase in Farmers Home Administration (FmHA) debt during 1975-84.
- o A doubling of debt for life insurance companies, for operating (commercial) banks, Production Credit Associations (PCA's), and individuals and other nonoperating lenders between 1975 and 1982 or 1984.
- o A large increase in CCC loans levels, ranging from \$8 to \$15 billion annually during the 1980's.

**Figure 12--Farm interest expenses
1978-84**

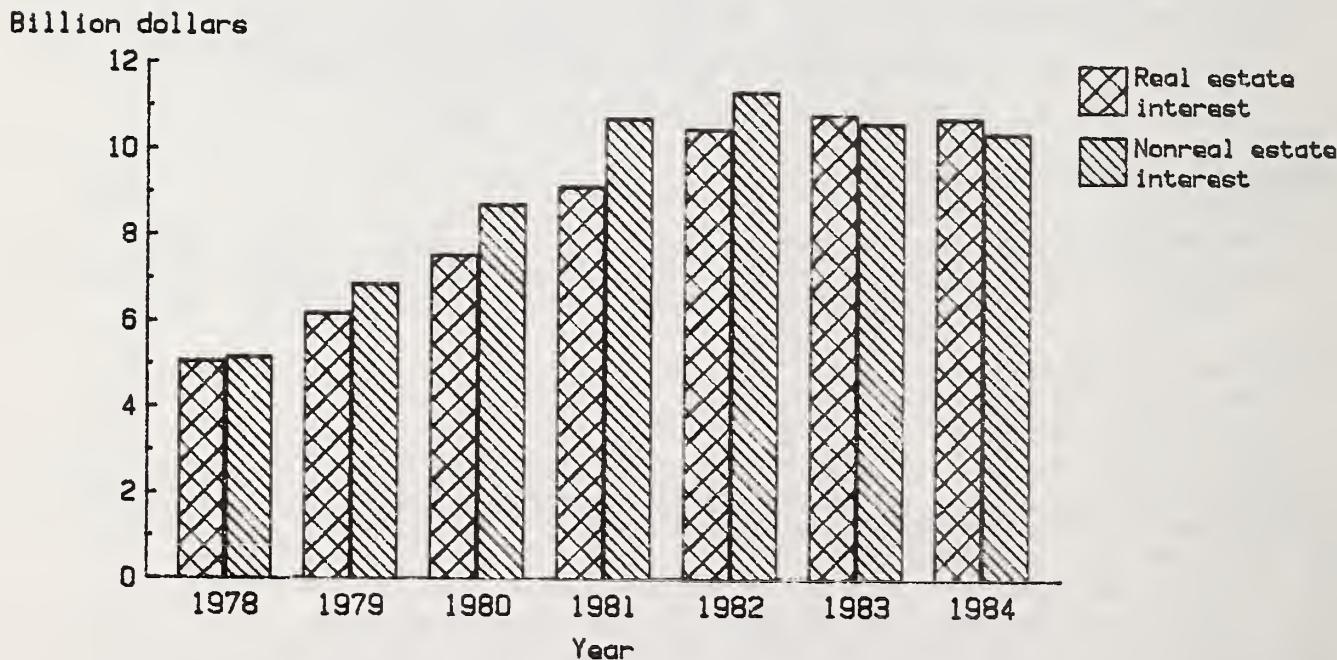


Table 23--Farm real estate and nonreal estate debt (including operator households), selected years, Dec. 31, 1975-84

Debt	: 1975	: 1980	: 1981	: 1982	: 1983	: 1984	1/
:							
:							
Debt owed to reporting institutions (excluding CCC):							
Federal land banks	: 16.0	36.2	43.8	47.7	48.8	49.1	
Life insurance companies	: 6.7	12.9	13.1	12.8	12.7	12.4	
All operating banks	: 26.5	40.3	41.3	44.6	48.4	49.9	
Production Credit Association	: 10.8	19.7	21.2	20.4	19.3	17.9	
Federal Intermediate Credit Banks	: .4	.8	.9	.9	.9	.9	
Farmers Home Admin.	: 5.1	19.5	23.2	23.8	24.1	25.7	
Total	: 65.4	129.3	143.4	149.9	153.6	155.2	
:							
Debts owed to individuals and others							
:							
:							
:							
Total, excluding CCC loans	: 91.2	177.2	193.9	201.4	204.9	203.1	
:							
CCC price support and storage loans	: .4	5.0	8.0	15.4	10.8	8.7	
Total, including CCC loans	: 91.7	182.3	202.1	217.2	216.2	212.5	

1/ Numbers may not add due to rounding.

- o Federal land banks, commercial banks, and individuals and others each hold nearly one quarter of outstanding debt (the remaining quarter is held by several institutions).
- o Federal land banks, FmHA, and CCC increased their share of outstanding debt from about 4 to 6 percentage points between 1975 and 1982.

The decline in the share of debt held by commercial banks and individuals and others from 57.1 to 46.2 percent between 1975 and 1984 constituted an important change in farm debt structure.

Operator Debt Distribution

Table 24 shows the distribution of operator, real estate, and nonreal estate debt by source of credit. The major lenders to farm operators, as reported in the 1984 Farm Costs and Returns Survey (FCRS), are commercial banks, Federal land banks, individuals, and FmHA. The reader is cautioned that the comparison of the 1979 and 1985 distributions is based on two distinct surveys rather than an update of the earlier (1979) survey. Differences in sampling techniques and survey questions exist between the two surveys. While both surveys offer the

Table 24--Distribution of farm operator debt by lender, Dec. 31, 1979

Lender	Type of Debt ^{1/}						Total 2/ 1979 : 1984	
	Secured by real estate		Not secured by real estate					
	1979	1984	1979	1984				
<u>Billion dollars</u>								
Commercial banks	11.07	14.05	14.26	19.81	25.32	33.96		
Federal Land Banks	19.29	27.14	N/A	2.88	19.29	30.02		
Production Credit Associations	2.92	4.32	8.50	7.57	11.42	11.89		
Farmers Home Administration	7.33	11.65	2.28	4.56	9.61	16.21		
Commodity Credit Corporation ^{4/}	.19	.24	1.91	1.44	2.10	1.68		
Merchants and dealers	.19	.24	4.95	2.04	5.14	2.28		
Individuals and others ^{5/}	24.10	16.81	3.95	7.44	28.04	24.26		
Total	65.09	74.45	35.83	45.74	100.92	120.20		

1/ The 1979 data are from the 1979 Farm Finance Survey; the 1985 data are derived from data reported in the 1984 Farm Costs and Returns Survey (FCRS) Expenditures Questionnaire.

2/ Numbers may not add due to rounding.

3/ Includes loans on crops, and loans for crop storage facilities.

4/ The one-third drop in real estate debt owed to "individuals and others" may be due to both differences in the definitions of "individuals and others" between the 1979 Farm Finance Survey and the FCRS survey, and to structural changes in agricultural debt financing. For example, the 1979 Farm Finance Survey explicitly identifies five categories of non-major lenders such as the Small Business Administration and "other lending institutions," while the FCRS survey was less explicit.

best available information for the respective year, the reader may be primarily interested in the levels of operator debt estimated from the most recent survey, as well as trends identified by comparison of the surveys.

- o The 20-percent increase in operator debt to \$120.3 billion illustrates the continuing financial difficulties of producers.
- o Compared to sector debt distribution, operator debt is more highly concentrated with commercial banks (28.2 percent) in particular as well as with Federal land banks (25 percent) and FmHA (13 percent).

- o FmHA, CCC, and federally sponsored agencies were estimated to hold about 50 percent of operator debt in 1984 versus 42 percent in 1979, indicating a trend of increasing importance.

While there are apparent differences between the distribution of sector debt and operator debt, the similarities between major trends (tables 23 and 24), including share by lender and the increases in total debt, are evident.

Commercial banks, which hold over 40 percent of nonreal estate debt and about 20 percent of real estate debt, would be most affected by short-term cash shortfalls and loan delinquency. The Farm Credit System's Federal land banks and PCA's and the FmHA hold almost 60 percent of real estate debt and have been most affected by declining land values in recent years. Individuals and others account for about half as much nonreal estate debt as the FCS and FmHA. Because information concerning the terms of these loans or characteristics of lenders and borrowers are not currently available, an assessment of the amount of this debt at risk or possible lender stress is not provided.

Capital Expenditures

Total farm capital expenditures for buildings (excluding operators' dwellings) and machinery fell 4.4 percent to \$12.5 billion, after the 4.6-percent drop in 1983 (table 25). Capital expenditures on all buildings (including operators' dwellings) declined 3.1 percent to about \$4.5 billion as expenditures on service buildings fell 10.9 percent. Capital expenditures on operators' dwellings rose an estimated 47 percent following a sharp downturn in 1983.

The recent financial crunch in the farm sector has caused many farm operators to forego or postpone buying farm machinery, relying instead on used equipment which has become more readily available. As a result, spending on farm machinery dipped 2.2 percent to about \$9.5 billion in 1984, continuing a trend begun in 1982. Truck sales increased 8.7 percent, but spending on autos, tractors, and other machinery fell 18, 8.1, and 1.5 percent, respectively.

Farmland Purchases and Sales

Farmland purchases fell by nearly 2 percent to slightly more than \$6 billion (table 26). Value per acre purchased increased 3.6 percent to \$770 per acre, but total acres purchased declined 341,000 acres to 7.8 million.

Farm operators sell farmland for numerous reasons including the desire to retire, the need to transfer the farm to the operator's children, the desire to obtain cash, and the need to reduce indebtedness. The need for cash appears to have accelerated farmland sales. Acres of farmland sold by farmers increased by an estimated 22 percent, although total acres purchased by farm operators dropped 4.2 percent.

The acres sold by operators as a percentage of total acres of farmland purchased by operators jumped from 72 percent in 1983 to 91 percent last year. As increasing amounts of operators' farmland were placed on the market, the per acre value of land sold by farmers to other farmers dropped from \$585 in 1983 to \$537. The 5-year decline in value of land sold by farmers to other farmers may reflect increased sales in particular regions most affected by financial stress, rather than reflecting general land price declines. Based on the increased farmland sales by operators, landlords withheld more of their land from the market and received higher prices per acre for the land they elected to sell, which may

Table 25--Farm sector capital flows (excluding farm households), selected years, 1975-84

Item	:	1975	:	1980	:	1982	:	1983	:	1984
:										
<u>Million dollars</u>										
Gross capital expenditures	:	12,384		17,982		13,655		13,027		12,454
Land improvements	:	1,641		1,170		939		959		880
Service structures	:	2,090		3,943		2,857		2,338		2,084
Tractors	:	2,460		3,683		2,877		2,753		2,529
Trucks	:	1,083		1,756		1,514		1,733		1,883
Automobiles	:	290		374		364		399		327
Other machinery and equipment	:									
:	:	4,820		6,956		5,104		4,823		4,751
:	:									
Inventory change	:	3,399		-5,928		-1,430	-10,565			7,827
Crops	:	4,444		-7,267		-739	-10,098			9,524
Livestock	:	-1,045		1,339		-690	-467			-1,697
:	:									
Gross savings <u>1/</u>	:	15,784		12,054		12,225		2,457		20,281
:	:									
Capital consumption allowances <u>2/</u>	:	10,604		17,846		19,922		19,684		19,268
:	:									
Depreciation	:	10,450		17,550		19,570		19,300		18,825
Service structures	:	2,012		3,420		3,528		3,331		3,197
Tractors	:	2,009		3,621		4,050		3,874		3,535
Trucks	:	1,012		1,846		2,207		2,301		2,474
Automobiles	:	411		670		870		887		874
Other machinery and equipment	:									
:	:	5,006		7,993		8,915		8,907		8,745
:	:									
Accidental damage	:	154		297		352		383		408
Service structures	:	139		273		324		355		376
Vehicles and machinery	:	15		24		28		29		32
:	:									
Net capital formation <u>3/</u>	:	5,179		-5,552		-7,112	-16,456			1,173
:	:									
Gross capital disappearance:										
plus net capital formation <u>4/</u>	:	15,784		13,930		6,799		8,341		13,578
:	:									

1/ Gross capital expenditures and inventory change.

2/ Depreciation and accidental damage.

3/ Gross savings less capital consumption allowances.

4/ Gross capital disappearance equals capital consumption allowances and net real estate transfers.

Table 26--Farmland purchases and sales, selected years, 1979-84 1/

Item	1979 2/	1983 3/	1984 4/	Percentage change 1979-84	1983-84
<u>Value: Million dollars</u>					
<u>Percent</u>					
Value:					
Land purchased	7,954	6,139	6,024	-24.3	- 1.9
Land sold for--					
Farm and ranch					
purposes	3,917	3,432	3,838	- 2.0	11.8
Nonfarm purposes	1,125	1,157	908	-19.3	-21.5
Total	5,042	4,589	4,746	- 5.9	3.4
<u>Thousands</u>					
Acres:					
Land purchases	10,701	8,169	7,828	-26.8	- 4.2
Land sold for--					
Farm and ranch					
purposes	5,228	5,865	7,146	36.7	21.8
Nonfarm purposes	803	396	376	53.2	- 5.1
Total land sold	6,031	6,261	7,522	24.7	20.1
<u>Dollars</u>					
Value per acre:					
Land purchased	743	751	770	2.5	3.6
Land sold for--					
Farm and ranch					
purposes	749	585	537	-28.3	- 8.2
Nonfarm purposes	1,401	2,922	2,145	72.4	-17.4
Total land sold	2,150	3,507	2,952	37.3	-15.8
<u>Million dollars</u>					
Value of mortgages	5,762	3,789	3,384	-41.2	-10.7

1/ Excludes landlords.

2/ Source: 1979 Survey of Farm Finance.

3/ Source: 1983 Farm Expenditure Survey.

4/ Source: 1984 Farm Costs and Returns Survey.

explain why the per acre value of all farmland purchased from operators and landlords increased 4 percent while the per acre value of land sold by operators decreased 8 percent.

Farm operators relied less on borrowing to purchase farmland. Mortgages worth \$5.8 billion made up 62 percent of farmland purchases in 1983 and 56 percent in 1984 as farmers increased the size of the downpayment. Increasing the size of the downpayment to reduce financial vulnerability may reduce the demand for farmland compared with previous years.

USDA records the financial burden imposed on farmers purchasing farmland in the farm sector economic accounts. Interest costs used to estimate total farm production expenses include mortgage interest on purchased land. Debt outstanding in the balance sheet includes debt to acquire farmland. In contrast, the financial gains of operators selling farmland is not measured. The appropriate economic accounting of farmland purchases is an important issue requiring further analysis. Related issues include the socio-economic characteristics of purchasers versus sellers such as age or the degree of indebtedness.

Operator Financial Stress

The growth in debt-to-asset ratios, the decline in the value of farm assets, the relatively high level of interest expense, and the continuing decline in capital investment indicate increasing financial stress in the farm sector.

Debt-to-Asset Ratios

Estimates from the 1984 FCRS showed that approximately 19 percent of farms have debt-to-asset ratios in excess of 40 percent, an increase of about 7 percent when compared with the 17.7 percent of farms with debt-to-asset ratios over 40 percent as of December 31, 1984 (table 27).^{5/} Debt ratios larger than 40 percent suggest some degree of financial stress. An estimated 3 percent of all farms had debts in excess of assets, indicating technical insolvency. About 80 percent of all farm operations had a debt-to-asset ratio of less than 40 percent, generally indicating a strong financial position.

Value of Sales Class. The larger sales classes have the highest proportions of farmers with debt-to-asset ratios beyond 40 percent. The December 31, 1984, FCRS data showed that 35.8 percent of farms with sales over \$500,000 have debt-to-asset ratios over 40 percent and that 38.3 percent of the farms with sales between \$250,000 and \$499,999 have debt-to-asset ratios over 40 percent (table 27).

Larger proportions of the higher sales classes can also be categorized either as very highly leveraged or technically insolvent. More than 6 percent of farms with sales of \$500,000 and over and 5.8 percent of farms with sales between \$250,000 and \$499,999 reported debts in excess of assets. The classes with sales of less than \$250,000 were financially stronger and less likely to have debt ratios greater than 70 percent. The largest estimated number of farms having debt-to-asset financial difficulties fell in the class with sales between \$40,000 and \$99,999. This reflects the large number of farms in this sales category.

^{5/} United States Department of Agriculture, Economic Research Service. The Current Financial Condition of Farmers and Lenders, AIB-490, Mar. 1985.

Table 27--Farms by sales class and debt-to-asset category, Dec. 31, 1984

Sales class	Technically insolvent farms (debt-to-asset ratio exceeds 100 percent 1/)		Very highly leveraged (debt-to-asset ratio exceeds 70 percent)		Highly leveraged (debt-to-asset ratio exceeds 40-70 percent)	
	Percentage of class	Farms 2/	Percentage of class	Farms	Percentage of class	Farms
1984	1984	1983	1984	1983	1984	1984
\$500,000 and over	6.1	1,844	15.3	14.7	4,468	17.4
\$250,000-\$499,999	5.8	3,993	12.6	14.7	10,111	19.0
\$100,000-\$249,999	4.7	10,759	9.2	12.3	28,342	18.1
\$40,000-\$99,999 3/	4.6	13,982	8.7	10.6	32,522	14.7
\$20,000-\$39,999 3/	4.0	8,011	7.9	8.2	16,352	9.7
\$10,000-\$19,999 3/	3.0	5,820	4.0	6.5	12,574	7.9
Less than \$10,000	2.0	6,191	4.5	6.1	18,640	8.1
All farms	3.0	50,599	6.6	7.3	123,007	11.1

1/ The number of technically insolvent farms was not estimated for 1984. 2/ The number of farms estimated for each class is determined directly from the survey estimate of farm numbers; the survey provides a relatively close estimate of farm numbers for farms with sales in excess of \$10,000 but undercounts farms with sales of less than \$10,000. One reason this occurs is because the FCRS counts farms only if they have actual sales of \$1,000. Surveys which count farm numbers include farms if they normally may have had \$1,000 in sales. 3/ The 1984 sales class definitions are different than the 1985. The 1984 definitions are: \$50,000-\$99,999, \$25,000-\$49,000, and \$10,000-\$24,999.

Type of Farm. Because of the importance to the agricultural sector of farms with sales greater than \$40,000, the analyses by type of farm and region are limited to these larger operations. Among crop farms, cash grain and vegetable and melon operations had the highest proportion of operators with debt-to-asset ratios over 40 percent (table 28). Dairy farms had the highest proportion of highly leveraged operators among livestock farms. About 68,000 cash grain farmers had debt-to-asset ratios greater than 40 percent. Of the farms with sales greater than \$40,000 and high debt ratios, about 160,000 were cash grain, general livestock, and dairy operations. These farm types constituted 82 percent of the larger farms with high debt-to-asset ratios. An estimated 1 in every 10 general crop farmers with sales greater than \$40,000 was technically insolvent (debts exceeded assets). About 5 percent of cash grain, field crop, vegetable and melon, and general crop farms with sales greater than \$40,000 were insolvent. More than 30,000 of these larger farms were estimated to be insolvent at the end of 1984.

Region. The Lake States, Corn Belt, Northern Plains, and Delta States had the highest proportion of highly and very highly leveraged farm operators (table 29). More than a third of the larger operators in these regions had debt to assets greater than 40 percent. These regions were also the regions with the largest proportion of technically insolvent operators. This is not surprising because these areas had large numbers of cash grain, livestock, and dairy farmers, had a large share of medium size operators, and had experienced the steepest drop in farmland values during 1984. The continued decline in asset values combined with relatively low returns from cash grain production also resulted in high debt exposure for production in the Midwest. The Corn Belt had the largest percentage of operators in the highly leveraged range, the Lake States led the country in the very highly leveraged category, and the Delta States led in the insolvent debt category. (Regional estimates may obscure trends that vary among States within the region.)

Financial Leverage and Cash Shortfalls

The FCRS survey data was used to estimate the availability (from both farm and nonfarm sources) and uses of cash income to pay for cash production expenses, interest and principal on outstanding debt, and to meet family living needs. The analysis assumes that all of the net cash operating income and off-farm income would be used to repay debt and provide for family living needs. Cash availability and needs by sales class and debt-to-asset ratio were determined by type of farm and by region. A measure of cash surplus or shortfall was estimated for each farm within each of these categories by subtracting family living needs (an estimated \$12,950 based on the 1983 median family income for nonmetropolitan counties) and principal repayment estimates (an estimated 8.6 percent of outstanding debt) from total available cash income. An estimate of the proportion of farms experiencing a cash shortfall was determined for each category.

Value of Sales Class. Financial stress is defined to be the occurrence of a cash shortfall and a debt-to-asset ratio over 40 percent. FCRS data showed about 129,000 farms with sales greater than \$40,000 in this category. Approximately 85,000 farms with sales less than \$40,000 also satisfied the financial stress criteria. These smaller farms are analyzed elsewhere.^{6/} Nearly two of every three farms with high debt-to-asset ratios also experienced financial stress (compare table 30 and table 29). Eighty-five percent of the 128,848 larger farms experiencing financial stress had sales between \$40,000 and \$250,000. These

^{6/} U.S. Department of Agriculture, Economic Research Service. Financial Characteristics of U.S. Farms, January 1985, AIB-495, July 1985.

Table 28--Farms by enterprise type and debt-to-asset category with sales greater than \$40,000, Dec. 31, 1985 1/

Type of farm	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Technically Insolvent (debt-to-asset ratio exceed 100 percent)	5.5	11,583	6.7	14,045	20.3	42,635	32.5	68,264	209,808											
Field crop	5.1	1,747	3.8	1,316	25.3	5,245	24.2	8,309	34,289											
Vegetable and melon	6.0	659	4.4	488	21.1	2,321	31.5	3,470	11,007											
Fruit and nut	3.9	552	6.1	869	17.0	2,432	26.9	3,854	14,324											
Nursery	9.6	882	3.6	334	11.2	1,027	24.5	2,244	9,178											
General crop	10.4	4,243	5.4	2,195	13.3	5,395	29.1	11,834	40,703											
General livestock	3.9	5,785	8.0	11,784	17.9	26,460	29.8	44,029	147,584											
Dairy	3.3	4,680	8.7	12,216	22.1	30,895	34.2	47,792	139,737											
Poultry and egg	1.8	433	6.6	1,557	19.7	4,637	28.1	6,629	23,552											
Other livestock	.2	8	1.2	56	8.0	384	9.3	449	4,833											
All farms	4.8	30,573	7.1	44,860	19.1	121,431	31.0	196,874	635,015											

1/ Totals may not add due to rounding.

Source: Farm Costs and Returns Survey, 1984, USDA. This survey is based on farm operator responses.

Table 29--Farms by region and debt-to-asset category with sales greater than \$40,000, Dec. 31, 1984 1/

Region	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Technically insolvent: Very highly leveraged: (debt-to-asset ratio exceeds 100 percent)	3.5	1,818	2.7	1,424	14.4	7,504	20.6	10,746	52.049			
Highly leveraged: (debt-to-asset ratio : 70-100 percent)	4.9	4,850	10.4	10,168	21.2	20,809	36.5	35,827	98,061			
Substantially leveraged: (debt-to-asset ratio : 40-70 percent)	5.6	8,707	8.7	13,443	22.8	35,225	37.1	57,375	154,599			
All farms with sales greater than \$40,000	5.6	4,808	7.4	7,337	21.8	21,732	34.0	33,877	99,737			
Northeast	4.8	581	5.6	2,617	14.4	6,658	21.3	9,856	46,330			
Lake States	1.3	1,372	4.8	1,482	14.1	4,322	23.4	7,176	30,703			
Corn Belt	4.5	2,642	6.7	1,949	20.5	5,947	36.3	10,538	29,059			
Northern Plains	9.1	1,899	6.9	3,103	12.0	5,379	23.2	10,381	44,845			
Appalachian	4.2	1,521	3.6	1,659	19.2	8,935	26.0	12,115	46,553			
Southeast	3.3	2,379	5.1	1,683	14.9	4,928	27.2	8,990	33,070			
Delta States	7.2											
Southern Plains												
Mountain States												
Pacific States												
United States:	4.8	30,577	7.1	44,865	19.1	121,436	31.0	196,881	635,006			

1/ Totals may not add due to rounding.

Source: Farm Costs and Returns Survey, 1984, USDA. This survey is based on farm operator responses.

Table 30--Assets and debts held by farm operators with sales greater than \$40,000 and negative cash flows, by sales class 1/

Item	Debt/asset ratio							
	Exceeds 100 percent				70-100 percent			
	Farms	Assets	Debts		Farms	Assets	Debts	
:								
: Percent Number Billion dollars Percent Number Billion dollars								
Sales class:								
\$500,000 and over	0.1	973	2.2	3.5	0.2	1,250	2.3	1.9
\$250,000-\$400,000	.4	2,377	1.1	1.6	.7	4,248	3.5	2.8
\$100,000-\$249,999	1.2	7,528	2.3	3.3	2.0	12,515	5.8	4.7
\$40,000 - \$99,999	1.7	10,657	1.7	2.3	2.5	15,669	4.0	3.4
Total	3.4	21,535	7.4	10.8	5.3	33,682	15.5	12.7

Item	Debt/asset ratio							
	40-70 percent				Exceeds 40 percent			
	Farms	Assets	Debts		Farms	Assets	Debts	
:								
: Percent Number Billion dollars Percent Number Billion dollars								
Sales class:								
\$500,000 and over	0.5	3,230	7.6	3.9	0.9	5,453	12.0	9.3
\$250,000-\$400,000	1.2	7,551	7.5	3.9	2.2	14,175	12.1	8.2
\$100,000-\$249,999	4.3	27,173	16.9	9.0	7.4	47,216	25.0	17.0
\$40,000 - \$99,999	5.6	35,678	11.5	6.2	9.8	62,004	17.3	11.9
Total	11.6	73,631	43.5	23.1	20.3	128,848	66.3	46.6

1/ Totals may not add due to rounding.

Source: Farm Costs and Returns Survey, 1984, USDA. This survey is based on farm operator responses.

sales classes had 84 percent of the nearly 21,535 larger farms with negative cash flows and debt to assets exceeding 100 percent. Cash shortfalls in farm businesses must be financed either with reduced family consumption, drawdowns of existing financial assets, selling physical assets, or with increased leverage from borrowing funds. The continuation of cash shortfalls for 2 to 3 years can often result in farm failure.

The distribution of debt and assets in table 30 indicates that farms with sales greater than \$40,000 and negative cash flows hold substantial amounts of U.S. farm debt. Debts exceed assets by \$3.4 billion for the technically insolvent farmers with negative cash flows. Farms in the \$500,000 and over sales category in financial stress are obligated for more than \$9 billion in debt and have an aggregate debt-to-asset ratio of about 78 percent. The larger farms experiencing financial stress hold more than \$46 billion in debt and have a debt-to-asset ratio of 70 percent. The financial health of these farmers is relatively weak.

Type of Farm. Cash grain, general crop, general livestock, and dairy farms dominated financially stressed U.S. farms with sales greater than \$40,000 (table 31). They made up about 84 percent of technically insolvent farms and 9 of 10 very highly leveraged and highly leveraged farms with financial stress. Cash grain and general livestock farms accounted for about \$5 billion of the debt held by insolvent farms with negative cash flows and \$40,000 or more in sales. Cash grain, general livestock, and dairy operations had \$53.5 billion in assets and \$36.2 billion in debts of the financially stressed larger farms. As in the analysis of financial stress by sales ratio, apparently, major differences existed in the shares of debt and assets held by farm types in severe financial stress.

Financial Stress by Region. The Corn Belt, Lake States, and Northern Plains showed the largest share of farms with high leverage--insolvent positions, cash shortfalls, and sales greater than \$40,000 (table 32). Farm types dominant in these regions and under the greatest stress include cash grain, livestock, and dairy operations. These regions have 55 percent of the farms with sales greater than \$40,000 (table 29). However, these three regions contained about 57 percent of the technically insolvent farms, 71 percent of the farms with debt-to-asset ratios between 70 and 100 percent, and almost two-thirds of the farms with ratios between 40 and 70 percent. These regions also accounted for about 59 percent of farm assets and 58 percent of the farm debt held by larger farms with cash shortfalls and debt-to-asset ratios between 40 and 100 percent. The overall debt-to-asset ratio of larger farms experiencing financial stress varied by region from 64 to 84 percent, with the Northeast having the lowest ratio and the Pacific States having the highest ratio. Financially stressed farms with debt exceeding assets had \$2.4 and \$2.5 billion debt at risk in the Corn Belt and Pacific States, respectively.

Productivity

In 1984, U.S. farm output, the fourth highest on record, rose more than 17 percent above the reduced levels of 1983 and was less than 7 percent below the peak reached in 1981 (table 33).

Production of livestock and livestock products have set records or neared record levels since 1980. In 1984, all livestock production dropped slightly from the record level reached in 1981 and 1983. Meat animal production changed very little from 1983 because output fell less than 2 percent for cattle and sheep and 3 percent for hogs. Milk production fell 3 percent. Poultry product output set a record high in 1984, spurred by a 5-percent increase in broilers.

Table 31--Assets and debts held by farm operators with sales greater than \$40,000 and negative cash flows, by type of farm, 1984

Item	Debt/asset ratio									
	Exceeds 100 percent			70-100 percent						
	Farms	Assets	Debts	Farms	Assets	Debts				
:										
:										
Type of farm:	Percent	Number	Billion dollars	Percent	Number	Billion dollars				
Cash grain	1.1	6,833	2.1	2.7	1.6	10,044	4.5	3.7		
Field crop	.2	1,316	.4	.6	.2	1,118	.4	.4		
Vegetables and melons	.1	340	.1	.2	.1	347	.2	.2		
Fruit and nut	.1	425	.5	.8	.1	563	.6	.5		
Nursery	--	122	--	--	--	40	--	--		
General crop	.6	3,931	1.3	2.1	.3	1,794	1.0	1.8		
General livestock	.7	4,452	1.8	2.3	1.3	8,478	4.0	3.3		
Dairy	.6	3,855	1.1	1.6	1.6	10,194	4.3	3.5		
Poultry and egg	--	251	.1	.5	.2	1,112	.3	.2		
Other livestock	--	9	--	--	--	44	--	--		
Total	3.4	21,534	7.4	10.8	5.3	33,683	15.5	12.7		
:										
:										
Type of farm:	Debt/asset ratio									
Cash grain	40-70 percent			Exceeds 40 percent						
Field crop	Farms	Assets	Debts	Farms	Assets	Debts				
Vegetables and melons	Percent	Number	Billion dollars	Percent	Number	Billion dollars				
Fruit and nut	3.7	23,473	13.9	7.5	6.4	40,350	20.5	13.9		
Nursery	.3	2,161	1.4	.7	.7	4,594	2.2	1.6		
General crop	.2	1,163	.4	.3	.3	1,889	.8	.6		
General livestock	.3	1,831	1.8	.9	.4	2,819	2.9	2.2		
Dairy	--	57	.1	.1	--	219	.2	.1		
Poultry and egg	.7	4,170	3.0	1.5	1.6	9,896	5.3	4.5		
Other livestock	3.1	19,629	12.2	6.5	5.1	32,509	18.0	12.1		
Total	11.6	73,631	43.5	23.1	20.3	128,848	66.3	46.6		

1/ Totals may not add due to rounding. Categories with less than one-tenth of a percent are shown with dashed lines.

Source: Farm Cost and Returns Survey, 1984, USDA. This survey is based on farm operator responses.

Table 32--Assets and debts held by farm operators with sales greater than \$40,000 and negative cash flows, by region, 1984 1/

Item	Debt/asset ratio							
	Exceeds 100 percent				70-100 percent			
	Farms	Assets	Debts	Farms	Assets	Debts		
:								
Region:								
Northeast	: 0.2	1,236	0.2	0.3	0.1	704	0.3	0.2
Lake States	: .7	4,489	1.0	1.3	1.4	9,072	3.9	3.1
Corn Belt	: .8	5,157	1.8	2.4	1.4	8,806	3.8	3.1
Northern Plains	: .4	2,709	.5	.7	1.0	6,276	2.5	2.1
Appalachian	: .1	574	.1	.2	.3	1,867	.5	.4
Southeast	: .2	1,186	.6	.8	.1	869	.5	.4
Delta States	: .3	1,796	.3	.5	.2	1,468	.5	.4
Southern Plains	: .2	1,445	.6	.9	.4	2,450	1.4	1.1
Mountain States	: .2	1,154	.7	1.0	.2	1,069	.9	.7
Pacific	: .3	1,788	1.3	2.5	.2	1,102	1.3	1.1
Total	: 3.4	21,534	7.4	10.8	5.3	33,683	15.5	12.7
:								
Debt/asset ratio								
40-70 percent				Exceeds 40 percent				
Farms	Assets	Debts		Farms	Assets	Debts		
:								
Region:								
Northeast	: 0.7	4,321	2.0	1.1	1.0	6,261	2.5	1.6
Lake States	: 2.3	14,886	6.9	3.8	4.5	28,447	11.9	8.3
Corn Belt	: 3.1	19,408	10.8	5.7	5.3	33,372	16.4	11.3
Northern Plains	: 2.3	14,714	8.1	4.5	3.7	23,699	11.1	7.3
Appalachian	: .4	2,792	1.2	.6	.8	5,233	1.8	1.3
Southeast	: .5	2,991	1.6	.8	.8	5,045	2.7	2.1
Delta States	: .5	3,422	2.5	1.3	1.1	6,685	3.3	2.2
Southern Plains	: .5	3,092	2.3	1.1	1.1	6,987	4.4	3.2
Mountain States	: .7	4,730	3.7	1.8	1.1	6,953	5.4	3.6
Pacific	: .5	3,276	4.3	2.2	1.0	6,166	6.9	5.8
Total	: 11.6	73,631	43.5	23.1	20.3	128,848	66.3	46.6

1/ Totals may not add due to rounding.

Source: Farm Cost and Returns Survey, 1984, USDA. This survey is based on farm operator responses.

Table 33--Farm sector output, input, and productivity, selected years

Item	Unit or base period	1970	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Output index:												
Crops	1977=100	77	93	92	100	102	113	101	116	118	88	110 1/
Livestock	1977=100	99	95	99	100	101	104	108	109	107	109	107 1/
Total	1977=100	84	95	97	100	104	111	103	118	116	95	111 1/
Input index	1977=100	97	96	99	100	102	105	103	102	99	95	96 1/
Productivity index 2/	1977=100	87	99	98	100	102	105	100	116	117	100	116 1/
Principal crops:												
Planted	1,000 acres	293,211	332,236	336,091	344,873	336,438	346,430	356,677	363,167	358,708	309,536	344,927
Harvested	1,000 acres	283,096	324,040	325,324	333,282	326,423	336,736	340,203	354,295	349,644	293,944	335,644
Machinery on farms:												
Tractors 3/	Thousands	4,619	4,469	4,434	4,402	4,777	4,776	4,752	4,726	4,697	4,669	4,671
Motor trucks	Thousands	2,984	3,032	4,043	3,044	3,358	3,358	3,344	3,350	3,389	3,435	3,402
Grain combines 4/	Thousands	790	524	527	535	655	655	652	650	647	644	644
Corn pickers & shellers 5/	Thousands	635	615	610	605	695	706	701	696	690	684	684
Balers 6/	Thousands	708	667	641	615	744	744	756	770	785	800	800
Tractor horse- power:												
Total	Mil. horse- power	203	222	228	232	259	301	304	306	306	309	311
Per tractor	Horsepower	56	61	62	63	65	63	64	65	65	66	67
Fertilizer and liming materials used:7/												
Nitrogen	1,000 tons	7,459	8,608	10,412	10,647	9,965	10,715	11,407	11,924	10,984	9,126	11,146
Phosphate	1,000 tons	4,574	4,511	5,228	5,630	5,096	5,606	5,432	5,434	4,814	4,139	4,929
Potash	1,000 tons	4,035	4,453	5,210	5,834	5,526	6,244	6,245	6,320	5,631	4,832	5,809
Total	1,000 tons	16,068	17,572	20,849	22,111	20,587	22,565	23,084	23,678	21,429	18,097	21,884
Liming materials 8/	1,000 tons	25,901	31,128	38,147	31,381	30,697	30,979	34,402	29,647	23,237	25,507	N/A
Fuels and energy used for farming:												
Gasoline	Billion gals	4.0	4.5	3.9	3.8	3.6	3.4	3.0	2.7	2.4	2.3	N/A
Diesel	Billion gals	1.9	2.4	2.8	2.9	3.2	3.2	3.2	2.9	2.9	3.0	N/A
Fuel oil	Billion gals	N/A	N/A	N/A	.286	.191	.162	.165	N/A	N/A	N/A	N/A
LP gas	Billion gals	N/A	1.0	1.2	1.1	1.26	1.12	1.05	1.05	1.00	.9	N/A
Natural gas	Bil. cu. ft.	N/A	N/A	N/A	153.2	127.3	93.3	94.1	N/A	N/A	N/A	N/A
Electricity	Billion kWh	N/A	N/A	N/A	36.2	31.4	39.2	39.9	39.7	N/A	N/A	N/A
Total hours used for farmwork:												
Crops	Million hours	2,788	2,630	2,556	2,530	2,449	2,436	2,443	2,446	2,372	2,130	2,253
Livestock	Million hours	2,344	1,701	1,613	1,522	1,422	1,349	1,285	1,213	1,142	1,082	1,008
Total 9/	Million hours	5,896	4,975	4,788	4,654	4,446	4,347	4,281	4,202	4,035	3,688	3,745

N/A = not available.

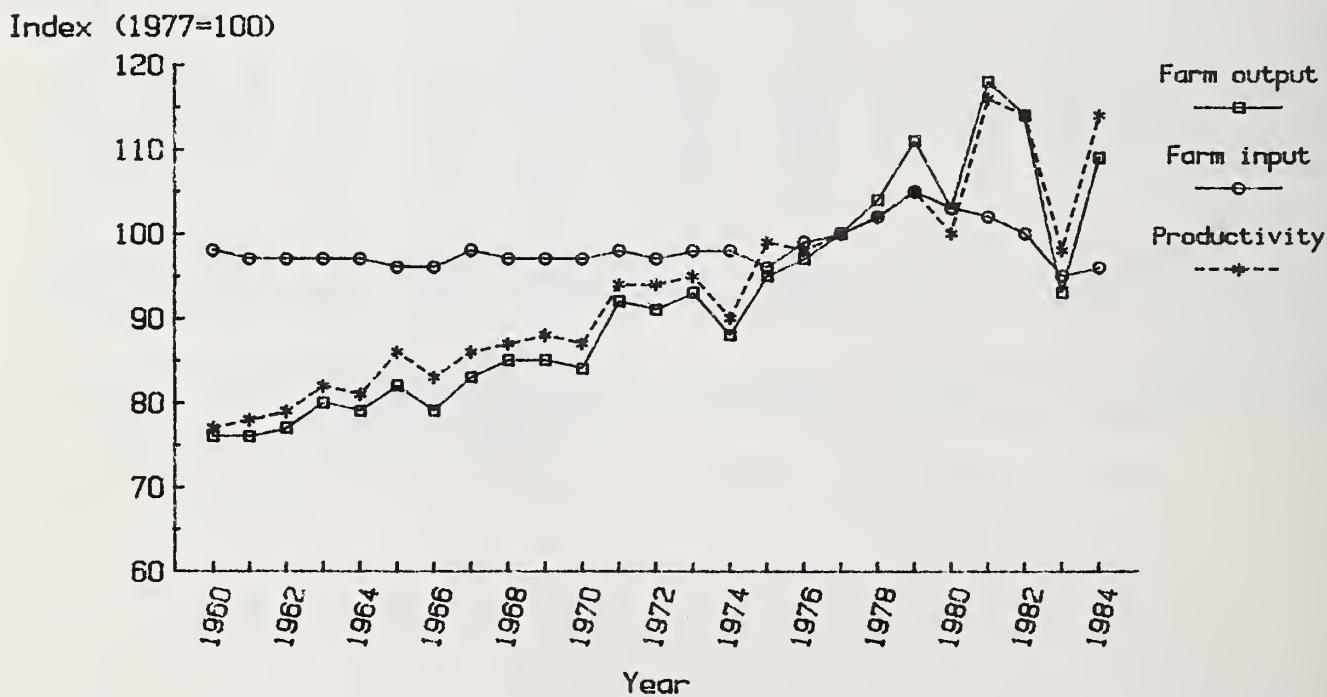
1/ Preliminary. 2/ Data computed from unrounded index numbers. 3/ Includes wheel- and crawler-type tractors. 4/ Data for 1975 and after are for self-propelled combines only. 5/ Includes cornheads for combines. 6/ Does not include balers producing bales weighing more than 200 pounds. 7/ Nitrogen, phosphate, and potash. Includes 50 States and Puerto Rico. Includes fertilizer for nonfarm use. 8/ Includes 48 States only. 9/ Hours include labor used on crops, livestock, and overhead.

Crop production jumped 25 percent from the acreage- and drought-reduced levels of 1983. Feed grains led the crop production declines in 1983 but forged the 73-percent rise in 1984. Cotton production increased by 70 percent. Other commodity group increases ranged from 21 percent for tobacco to 3 percent for sugar crops.

Crop yields averaged 12 percent higher with improvements shown by corn (33 percent), tobacco (21 percent), cotton (22 percent), sorghum grain (15 percent), and soybeans (7 percent). Wheat yields slipped from the record set in 1983. Cotton and tobacco yields hit record highs at 573 pounds and 2,187 pounds per acre, respectively. Also, planted acreage increased 35 million acres to a total of 345 million acres, primarily because Government programs had substantially reduced 1983 crop acreage.

Input use climbed an estimated 1 percent from the reduced levels of 1983. A 17-percent increase in farm output and a 1-percent rise in farm input use produced an 16-percent increase in productivity, the third highest increase ever recorded (fig. 13). The relatively flat levels of input use have permitted productivity to parallel changes in farm output levels since 1960.

Figure 13--Indexes of farm output,
input, and productivity
1960-84



Farm Machinery

Onfarm tractor inventories remained at 4.67 million vehicles, ending five consecutive year of decline. Total power for the farm tractor inventory rose from 309 to 311 million horsepower (hp) because farmers purchased tractors with increased power. The average per unit size for farm tractors rose from 66 hp to 67 hp.

Motor truck buying has continued to rise sharply since 1970. In 1984, the number of motor trucks decreased from the 1983 peak to 3.4 million vehicles. The number of grain combines has leveled off over the past couple of years. The number of cornheads has gradually declined since reaching a peak in 1979. The use of balers had increased every year since 1970 until the peak year of 1983 when the number of balers on farms reached 800,000. In 1984, the number of balers remained at 800,000, possibly indicating a leveling-off trend. Larger, more efficient new machinery and the decline in farm income are responsible for these possible trends.

Fertilizer and Energy

Farm use of fertilizer nutrients in 1983/84 increased substantially from 1982/83's PIK-reduced level. Fertilizer use in 1983/84 rose 21 percent to nearly 22 million tons. Nitrogen use increased to about 11.1 million tons, phosphate 4.9 million tons, and potash 5.8 million tons.

Gasoline buying declined 4 percent and diesel fuel purchases rose 3 percent in 1983. Liquefied petroleum (LP) gas consumption declined 18 percent primarily because of reduced crop drying.

Gasoline consumption has declined 43 percent since 1970 because farmers have switched from gasoline- to diesel-powered tractors and farm machinery. Diesel purchases jumped 58 percent since 1970 but LP gas hit a new low, at 900 million gallons, a continuation of a trend begun in 1978.

Costs and Returns

Costs and returns at the crop and livestock commodity level are used to determine the financial status of an enterprise because farms are usually a collection of individual activities. Cost-of-production (COP) estimates measure national weighted average costs and returns on a per unit basis. For crop COP estimates, the production unit is the planted acre; for livestock COP estimates, the production unit is hundredweight or animal unit, depending on the enterprise. Crop yields are determined on a planted-acre basis and prices received by farmers are those at month of harvest. COP budgets for crops and livestock are estimated according to major producing regions.

USDA procedures for estimating cash receipts omit Direct Government payments, like PIK, except for wool. Assessment is more complex for other forms of Government payment. In the peanut, milk, and wool programs, the product price is supported by the Government through direct market intervention. So, the value of production reflects the combined market price and masks Government payments. In contrast, most crop price support programs, including PIK, are voluntary and contain special provisions for compliance.

Tables 34-38 summarize 1983 and estimated 1984 preliminary per unit production costs and returns for major U.S. crops and livestock. Beginning in 1984, ERS introduced a new COP format to provide more comprehensive statistics, net return estimates, and detail on input costs. Because cash receipts are included in the budgets, residual returns to management and risk (allocated returns to owned resources) may be estimated more accurately. Cash expenses and economic costs such as depreciation are also separated, so short- and long-term returns can be determined. For purposes of this section, net receipts are defined as receipts less cash expenses and capital replacement. Because economic costs appear separately, we can see how producers may allocate remaining cash returns to owned inputs (a purely managerial rather than accounting decision).

Cost determinations can differ considerably and still be valid for particular purposes and circumstances. The costs are national averages for crop and livestock production based on an average acre of land, animal unit, or hundredweight of production. COP estimates are indicators of year-to-year changes in production costs, and as such, are adequate for assessing neither a farm's total income (from multiple enterprises) nor a particular farm operator's current cash situation. COP estimates are based on a set of national and regional budgets produced and updated by computerized budget-generator and aggregation programs. These budgets are, in turn, based primarily on data from producer surveys repeated every 4 or 5 years for each major commodity.

The 1984 estimates for crops indicate that residual returns to management and risk declined for corn, sorghum, barley, wheat, rice, cotton, soybeans, sunflowers, and flax. The only listed crops for which residual returns improved were oats, up 13 percent, and peanuts, up 4 percent. In general, harvest period prices decreased--corn was down 20 percent; sorghum, 13 percent; barley, 3 percent; wheat, 3 percent; rice, 8 percent; cotton, 6 percent; soybeans, 24 percent; sunflowers, 10 percent; flax, 16 percent. Net receipts, as used in the COP budgets, show farm enterprise profitability and are defined here as cash receipts less cash expenses and capital replacement. Net receipts measure the cash left over to pay principal on debt, family living expenses, a return to management, operator labor, and returns to durable owned inputs such as machinery and land. From 1982 to 1984, net returns varied widely by crop and livestock enterprise.

Normal yields and acreage planted in 1984 increased available stocks and depressed grain prices. In 1983, yields had dropped for 10 of the 11 major crops for which costs of production were estimated. Wheat, which escaped drought for the most part, showed yields up 11 percent and prices up slightly. Corn and soybean yields dropped most, 28 percent and 20 percent, respectively. The reduced acreage and lower yields produced lower levels of reserve stocks, which raised prices for most crops.

Feed prices for corn, grain, and protein supplements decreased in 1984 after increasing in 1983. Feed accounts for nearly half of total production costs for many livestock and milk producers. However, interest costs increased only 2 percent throughout the year which reduced borrowing and ownership costs.

Total cash receipts per acre of corn, barley, and cotton generally remained near 1983 levels or increased marginally. Total cash receipts increased 17 percent for oats and decreased 18 percent for soybeans. Most other commodities experienced declining total cash receipts. During this same period, expenses (including variable expenses, fixed expenses, and capital replacement costs) rose gradually, which, coupled with the general decrease in receipts because of lower 1984 U.S. and world prices, caused moderate declines in net cash receipts per acre (fig. 14).

Table 34--Production costs and returns for U.S. feed grains, 1983-84

Item	Corn	Corn	Sorghum	Sorghum	Barley	Barley	Oats
	1983	1984	1983	1984	1983	1984	1983
<u>Dollars per planted acre</u>							
Total cash receipts	252.90	271.09	131.58	130.72	120.31	118.98	94.60
Cash expenses:							111.06
Total variable 1/	124.78	134.11	64.13	66.22	55.29	56.95	41.72
Total fixed 2/	73.77	79.27	36.23	38.15	42.22	42.90	31.60
Total cash expenses	198.55	213.38	100.36	104.37	97.51	99.85	73.32
Receipts less cash expenses	54.35	57.71	31.22	26.35	22.80	19.13	21.28
Capital replacement	33.56	36.38	26.74	27.30	24.56	25.36	22.98
Receipts less cash expenses and replacement	20.79	21.33	4.48	-.95	-1.76	-6.23	-1.70
<u>Economic (full ownership) costs:</u>							
Variable expenses 1/	124.78	134.11	64.13	66.22	55.29	56.95	41.72
General farm overhead	15.22	16.29	7.65	7.73	9.33	9.36	5.18
Taxes and insurance	13.45	14.46	7.82	9.17	8.53	9.00	12.35
Capital replacement	33.66	36.38	26.74	27.30	24.56	25.36	22.98
Allocated returns to owned inputs--:							
Operating capital 3/	4.75	5.75	2.29	2.62	1.53	1.80	1.03
Other nonland capital 4/	12.17	13.43	9.48	10.86	9.14	9.37	9.81
Net land rent 5/	47.95	49.83	31.18	30.62	31.83	30.78	24.25
Labor 6/	13.55	14.94	13.15	13.52	11.07	10.97	12.92
Total economic costs	265.43	285.19	162.44	168.04	151.28	153.59	130.24
Residual to management and risk 7/	-12.53	-14.10	-30.86	-37.32	-30.97	-34.61	-35.64
Total returns to owned inputs 8/	65.89	69.85	25.24	20.30	22.60	18.31	12.37
<u>Dollars per bushel 9/</u>							
Harvest-period price	3.21	2.58	2.84	2.46	2.36	2.29	1.45
Yield	78.76	105.07	46.29	53.10	49.65	50.32	48.92
<u>Bushels per planted acre 9/</u>							

1/ Includes: seed, fertilizer, lime, chemicals, custom operations, fuel and lubrications, repairs, drying, purchased irrigation water, management fees, and technical services. 2/ Includes: taxes and insurance, general overhead, and cash interest paid. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 5/ Of rented acres, percent cash and share rented multiplied by the average cash and share rent. 6/ Hired labor (a cash expense) and unpaid labor could not be separately identified given available survey data. 7/ Calculated by subtracting total economic (full ownership) costs from total cash receipts. 8/ Sum of allocated and residual returns. 9/ Pounds for cotton and peanuts and hundredweight for rice and sunflower.

Table 35--Production costs and returns for U.S. food grains and cotton, 1983-84

Item	1983 :	1984 :	Rice	Cotton	Dollars per planted acre		
			Wheat	1983 :	1984 :	1983 :	1984 :
Total cash receipts	132.97	123.95	400.12	393.22	377.05	401.81	
Cash expenses:							
Total variable <u>1/</u>	53.56	55.11	235.64	245.03	201.64	224.67	
Total fixed <u>2/</u>	37.60	40.76	82.93	85.61	87.29	92.81	
Total cash expenses	91.16	95.87	318.57	330.64	288.93	317.48	
Receipts less cash expenses	41.81	28.08	81.55	62.58	88.12	84.33	
Capital replacement	21.02	21.67	47.94	50.77	44.88	48.63	
Receipts less cash expenses and replacement	20.79	6.41	33.61	11.81	43.24	35.70	
Economic (full ownership) costs:							
Variable expenses <u>1/</u>	53.56	55.11	235.64	245.03	201.64	224.67	
General farm overhead	8.05	8.79	23.08	23.67	23.23	24.54	
Taxes and insurance	7.69	8.10	10.47	11.30	9.30	10.50	
Capital replacement	21.02	21.67	47.94	50.77	44.88	48.63	
Allocated returns to owned inputs--:							
Operating capital <u>3/</u>	2.51	2.94	6.78	8.20	5.80	7.19	
Other nonland capital <u>4/</u>	7.49	7.35	17.16	18.05	14.93	16.00	
Net land rent <u>5/</u>	34.41	30.57	65.00	62.00	62.84	65.21	
Labor <u>6/</u>	10.35	10.26	35.23	36.08	32.79	34.31	
Total economic costs	145.08	144.79	441.30	455.10	395.41	431.05	
Residual to management and risk <u>7/</u>	-12.11	-20.84	-41.18	-61.88	-18.36	-29.24	
Total returns to owned inputs <u>8/</u>	42.65	30.28	82.99	62.45	98.00	93.47	
Harvest-period price	3.48	3.37	8.79	8.05	.66	.62	
Yield	36.89	35.37	45.53	48.87	470.40	573.22	

See footnote at end of table 34.

Table 36--Production costs and returns for U.S. oilseed crops, 1983-84

Item	Soybeans		Sunflowers		Peanuts		Flax	
	1983	1984	1983	1984	1983	1984	1983	1984
<u>Dollars per planted acre</u>								
Total cash receipts	204.46	166.93	125.74	109.81	580.01	719.90	86.18	80.14
Cash expenses:								
Total variable 1/	57.24	60.05	51.84	53.64	276.84	300.31	32.88	34.89
Total fixed 2/	54.18	56.46	37.73	38.63	136.26	139.76	25.85	26.49
Total cash expenses	111.42	116.51	89.57	92.27	413.10	440.07	58.73	61.38
Receipts less cash expenses	93.04	50.42	36.17	17.54	166.91	279.83	27.45	18.76
Capital replacement	24.50	25.48	19.86	20.55	49.85	51.57	22.28	23.07
Receipts less cash expenses and replacement	68.54	24.94	16.31	-3.01	117.06	228.26	5.17	-4.31
Economic (full ownership) costs:								
Variable expenses 1/	57.24	60.05	51.84	53.64	276.84	300.31	32.88	34.89
General farm overhead	10.43	10.79	8.21	8.36	27.92	28.32	4.89	4.98
Taxes and insurance	11.18	12.03	5.92	6.22	10.54	11.07	6.93	7.21
Capital replacement	24.50	25.48	19.86	20.55	49.85	51.57	22.28	23.07
Allocated returns to owned inputs:								
Operating capital 3/	2.21	2.66	1.67	1.99	9.56	11.69	.84	1.01
Other nonland capital 4/	8.22	8.47	7.06	7.22	18.82	19.23	8.61	8.86
Net land rent 5/	63.46	52.99	32.75	30.21	84.63	91.45	21.55	20.60
Labor 6/	11.29	11.49	6.94	7.14	30.97	31.85	9.67	10.03
Total economic costs	188.53	183.96	134.25	135.33	509.13	545.49	107.65	110.65
Residual to management and risk 7/	15.93	-17.03	-8.51	-25.52	70.88	174.41	-21.47	-30.51
Total returns to owned inputs 8/	101.11	58.58	39.91	21.04	214.86	328.63	19.20	9.99
<u>Dollars per bushel 9/</u>								
Harvest-period price	7.95	6.06	12.23	11.03	.24	.25	6.87	5.79
Yield	25.72	27.55	10.28	9.95	2,350.15	2,854.38	11.51	12.65

See footnote at end of table 34.

Table 37--Production costs and returns for U.S. beef and dairy, 1983-84

Item	Cow calf/cow		Fed cattle		Milk/cwt		Milk/cow	
	1983	1984	1983	1984	1983	1984	1983	1984
<u>Dollars/cwt.</u>								
Total cash receipts	247.18	258.78	62.12	65.64	14.59	14.44	2,055.19	2,010.76
Cash expenses:								
Total variable <u>1/</u>	181.15	189.50	62.26	62.24	7.93	8.02	1,121.11	1,122.01
Total fixed <u>2/</u>	87.65	90.72	6.16	5.75	2.52	2.48	349.85	342.27
Total cash expenses	268.80	280.22	68.42	67.99	10.45	10.50	1,470.96	1,464.28
Receipts less cash expenses								
Capital replacement	-21.62	-21.44	-6.30	-2.35	4.14	3.94	584.23	546.48
Receipts less cash expenses and replacement	64.28	64.19	1.21	1.08	1.58	1.56	219.70	214.76
	-85.90	-85.63	-7.51	-3.43	2.56	2.38	364.53	331.72
Economic (full ownership) costs:								
Variable expenses <u>1/</u>	181.15	189.50	62.26	62.24	7.93	8.02	1,121.11	1,122.01
General farm overhead	19.26	20.64	.63	.55	.61	.61	85.17	84.16
Taxes and insurance	23.43	22.78	.18	.16	.36	.34	47.04	45.17
Capital replacement	64.28	64.19	1.21	1.08	1.58	1.56	219.70	214.76
Hired management			.14	.11				
Allocated returns to owned inputs--:								
Operating capital <u>3/</u>	11.68	12.16	1.64	1.74	.12	.12	16.55	16.59
Other nonland capital <u>4/</u>	45.52	45.47	.48	.44	.98	.96	138.85	131.36
Land <u>5/</u>	132.74	131.18	.20	.14	.37	.36	51.27	49.28
Unpaid labor	74.68	75.79	.52	.46	1.49	1.52	205.66	208.01
Total economic costs	552.74	561.71	67.26	66.92	13.44	13.49	1,885.35	1,871.34
Residual to management and risk <u>6/</u>	-305.56	-302.93	-5.14	-1.28	1.15	.95	169.84	139.42
Total returns to owned inputs <u>7/</u>	-40.94	-38.33	-2.30	1.50	4.11	3.91	582.17	544.66

1/ Includes: feeders, feed, veterinary and medicine, marketing, bedding, custom feed mixing, fuels, machinery and building repairs, hired labor, and manure credit. 2/ Includes: taxes and insurance, general overhead, and cash interest paid. 3/ Variable expense items multiplied by part of year used and the 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in farm sector. 5/ Value of land multiplied by longrun real rate of return to production assets in farm sector. 6/ Calculated by subtracting total economic (full ownership) costs from total cash receipts. 7/ Sum of allocated and residual returns.

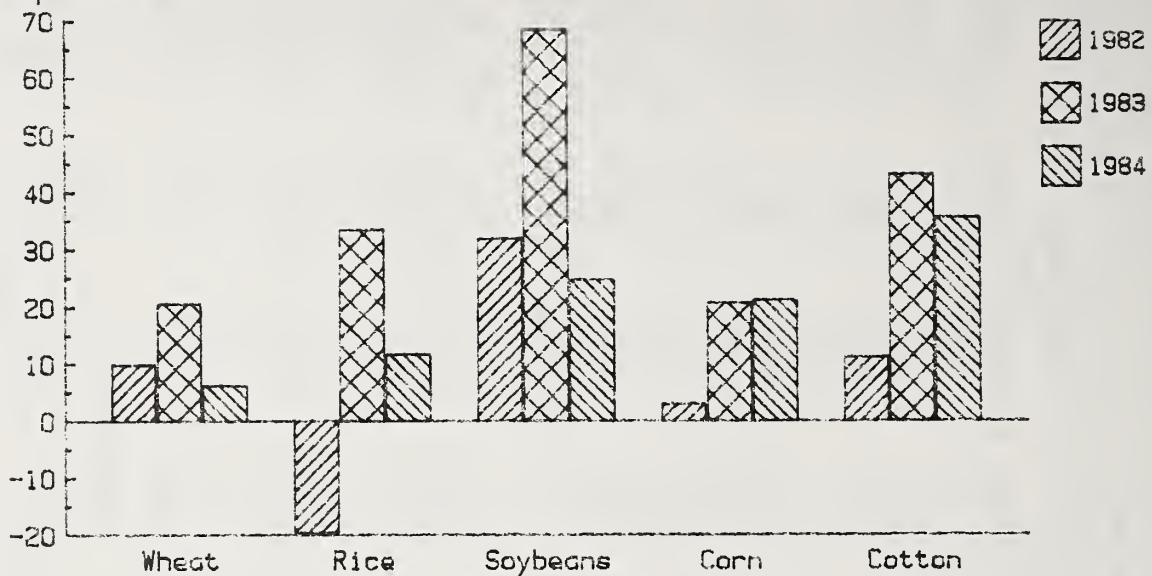
Table 38--Production costs and returns for U.S. hogs and sheep, 1983-84

Item	Feeder pig		Feeder pig		Farrow-to-finish		Sheep	
	production	finishing	1983	1984	1983	1984	1983	1984
-----/Dollars/cwt-----								
Total cash receipts	69.51	74.59	47.34	48.39	46.92	48.14	46.89	58.42
-----/Dollars/animal-----								
Cash expenses:								
Total variable 1/	62.32	62.23	44.33	41.48	37.52	37.14	29.25	30.12
Total fixed 2/	14.15	14.99	9.02	9.21	9.12	9.36	13.80	14.90
Total cash expenses	76.47	77.22	53.35	50.69	46.64	46.50	43.05	45.02
Receipts less cash expenses	-6.96	-2.63	-6.01	-2.30	.28	1.64	3.84	13.40
Capital replacement	13.35	12.57	3.04	2.97	6.19	5.95	1.84	1.84
Receipts less cash expenses and replacement	-20.31	-15.20	-9.05	-5.27	-5.91	-4.31	2.00	11.56
Economic (full ownership) costs:								
Variable expenses 1/	62.32	62.23	44.33	41.48	37.52	37.14	29.25	30.12
General farm overhead	2.88	3.14	2.32	2.40	2.11	2.22	2.86	3.24
Taxes and insurance	2.10	2.04	.42	.42	.78	.75	1.84	1.75
Capital replacement	13.35	12.57	3.04	2.97	6.19	5.95	1.84	1.84
Allocated returns to owned inputs--:								
Operating capital 3/	1.79	2.15	.66	.80	.93	1.10	1.68	1.72
Other nonland capital 4/	6.23	5.63	1.24	1.20	2.52	2.36	4.22	4.18
Land 5/	1.92	1.73	.09	.09	.36	.33	10.88	10.66
Unpaid labor	17.95	18.05	1.42	1.44	4.78	4.83	7.33	7.50
Total economic costs	108.54	107.54	53.52	50.80	55.19	54.68	59.90	61.01
Residual to management and risk 6/	-39.03	-32.95	-6.18	-2.41	-8.27	-6.54	-13.01	-2.59
Total returns to owned inputs 7/	-11.14	-5.39	-2.77	1.12	.32	2.08	11.10	21.47

See footnote at end of table 37.

Figure 14--Net cash returns per acre
1982-84

Dollars per acre



Although estimated total returns for corn increased by 7 percent, rising costs reduced the increase in net receipts to less than 3 percent. Net returns to owned inputs increased 6 percent. Grain sorghum yields improved, but the declining price and rising costs resulted in negative net receipts. Total returns to barley declined slightly, resulting in income insufficient to cover cash expenses and capital replacement. Oats prices and yields climbed, yielding positive net receipts. Total per acre returns to wheat producers decreased, and estimated net receipts declined from \$21 per acre to \$6 per acre. Rice yields increased, but total returns decreased, and net receipts dipped from \$34 per acre to \$12 per acre.

Improvements in the farm financial situation of cotton producers rested on the recovery from the 1983 drought. In the Southeast, cotton net cash receipts per acre during 1983 (before Government payments) were substantially negative. Southeast cotton yields improved almost 80 percent in 1984, and despite a price decline, total cash receipts climbed by nearly 60 percent. Overall, both cotton and rice net earnings improved in 1983, then worsened in 1984.

Farmers who planted sorghum, barley, sunflowers, and flax in 1984 could not cover cash costs and capital replacement. Reduced prices and yields, coupled with rising costs, caused 1984 net cash receipts of hard red winter wheat to be about zero. Soft red winter wheat, grown in the Eastern States, has generated near zero net returns since 1982. Estimated net cash receipts for this crop were only slightly less favorable than 1983's, when most wheat producers experienced their highest net returns since 1980.

Net receipts for peanuts and soybeans (until 1984) have shown relatively high profits compared with all other crop and livestock enterprises. The net cash receipt data do not include any expenses relating to rental of peanut allotments.

Soybean producers saw harvest period prices fall from \$7.95 per bushel in 1983 to \$6.06 in 1984, slicing net receipts by \$43 per acre. Sunflower yields, prices, and returns decreased. Peanut prices were up slightly, but a 21-percent increase in yield led to increased returns, a strong cash position, and a near doubling of 1983 net returns.

The 1984 cost and return estimates discussed here do not include the additional cash flow created by commodity program participation. For participants, price deficiency payments would have added about \$21.65 per acre in cash flow for wheat, \$5.94 for oats, \$10.29 for barley, \$70.18 for cotton, and \$135.34 for rice, greatly improving the overall farm returns for producers of these crops participating in the government program.

A general understanding of cropping patterns and enterprise cost and return estimates (previously published as USDA COP estimates) helped reveal the economic well-being of farms in different areas of the country. For example, corn is grown in combination (double-crop) with many crops. In the eastern Corn Belt, farmers double-crop corn with soybeans and soft red wheat; in the Plains and western Corn Belt, corn grows on the same land as soybeans, grain sorghum, barley, or wheat. Corn and soybean net receipts both decreased in 1984, revealing that any improvement in the financial position of producers of these two principal crops during 1983 eroded in 1984.

In the Plains and northern and western Corn Belt, sorghum and barley net receipts per acre remained negative in 1984, aggravating cashflow problems there.

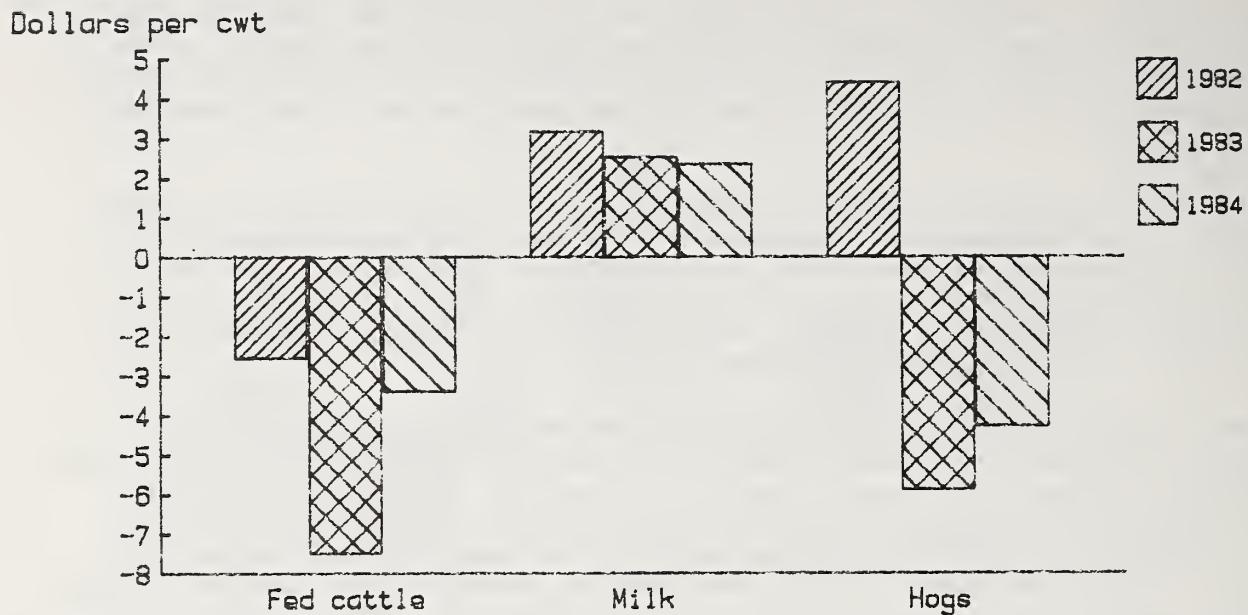
Wheat is grown nationwide. Farms depending on wheat for a primary share of receipts are basically located in the Southern and Northern Plains and Pacific Northwest. Southern Plains producers primarily grow cotton and sorghum with wheat; the estimated returns for each of these crops improved in 1983, then worsened in 1984.

In the Northern Plains and Pacific Northwest, growers plant barley and corn with wheat. Estimated returns for corn and wheat fell substantially in 1984, diminishing cash resources.

The 1984 estimates for livestock indicate that residual returns to management and risk improved slightly but remained negative for feeder pig producers and finishers and farrow-to-finish and sheep producers. Dairy farms were the only livestock operations to have positive residual returns to management and risk. Cow-calf receipts improved 5 percent. But, even though feed prices increased only 1 percent, net receipts declined slightly because of higher prices for other purchased inputs.

Net receipts for cow-calf operations were minus \$86 per cow in both 1983 and 1984. The fed beef situation improved slightly, as total cash receipts increased by 6 percent, and the loss to net receipts decreased from minus \$7.50 per cwt to minus \$3.40 per cwt (fig. 15). Dairy total cash receipts decreased 15 cents in 1984 to \$14.44 per cwt of milk, and net receipts fell to \$2.38 per cwt. Total cash receipts improved by 7 percent for feeder pig producers, 2 percent for feeder pig finishers, and 3 percent for farrow-to-finish operators. Stable to decreasing

Figure 15--Net cash returns per hundredweight
1982-84



cash expenses led to improved, but still negative, net receipts. Sheep receipts increased 25 percent, resulting in a net receipt increase from \$2 per cwt to \$11.56.

Meat animal prices increased almost 3 percent, feed prices less than 1 percent, and feeder livestock prices decreased almost 4 percent in 1984. However, higher prices of other purchased inputs damped the more favorable price spread for livestock producers.

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